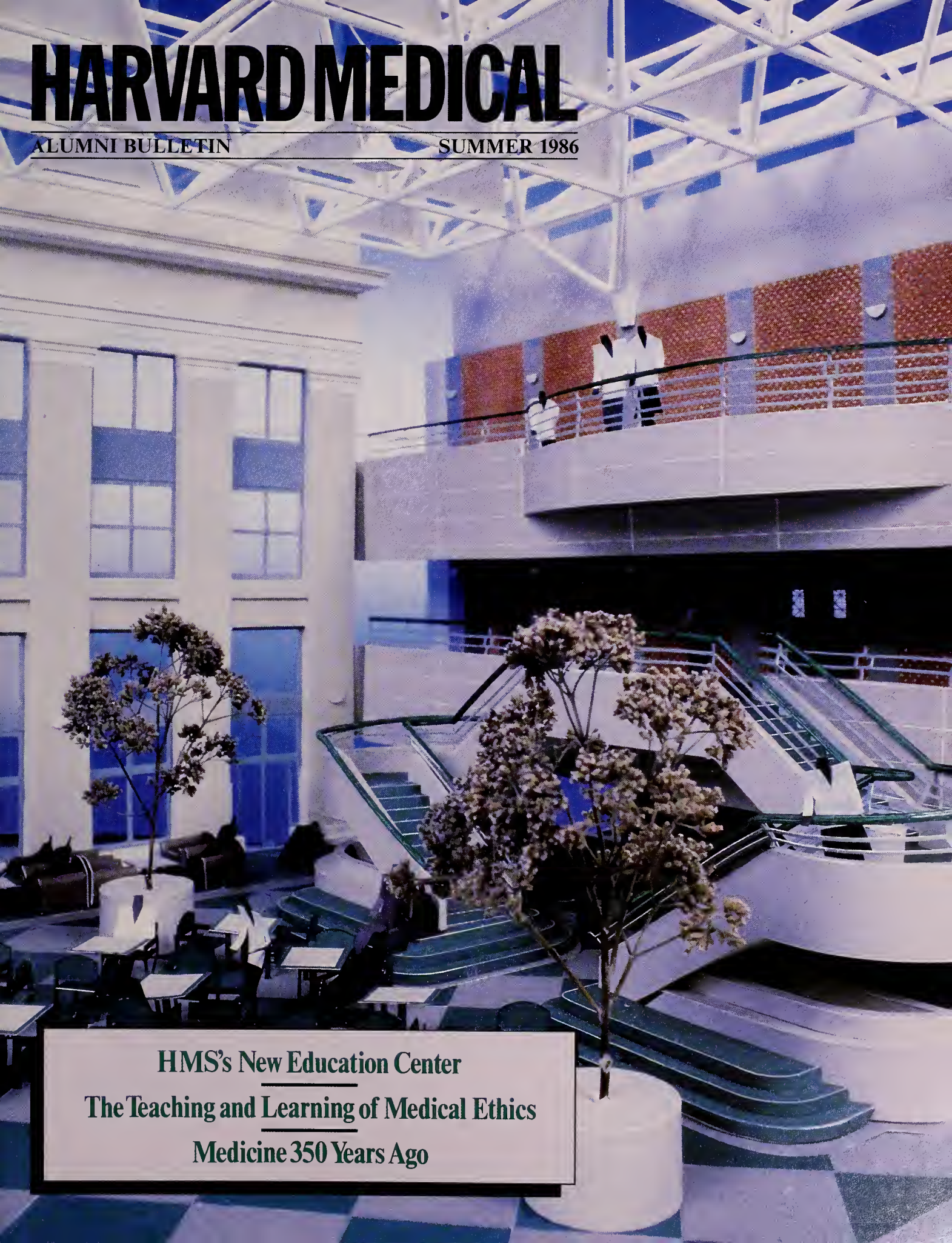


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ALUMNI BULLETIN

SUMMER 1986



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Cover: Model of the commons area of the new Medical Education Center (see page 12). Open space at intersection of walls is a corridor that continues into Building E. Photo by Fred Mirliani.

What is truth?" said jesting Pilate, and would not stay for an answer. In the altogether unlikely event that he has access to this *Bulletin*, will it satisfy him? Who knows?

Ethics or moral philosophy, call it what you will, is our subject—not ethics *per se*, but the teaching and learning of ethics. Much of it will almost certainly go on in the new building that graces our cover.

Joe Murray '43B leads off with remarkable insights into a pioneer surgeon's conscience. Then Ken Ryan '52, once chairman of the National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, ponders the teaching of moral philosophy in an increasingly secular world—and comes to sensible conclusions.

A sampler of experience and opinion follows. Will Cochran '52 poses the dilemmas that new technology has brought to the care of small ones. Edward Hundert '84 describes the formal teaching of ethics. Allan Brandt and Lynn Peterson take up the subject separately. Perri Klass '86 writes perceptively and articulately on the subject from a student's point of view, reminiscent of Steve Hoffman '81 in the February 1981 *HMAB*. Psychiatrist George Papanek '59, with almost total recall 25 years later, unlocks his stored anger over his first encounter with the death of a patient. Finally, Tom Hackett makes the connection between tattoos, about which he knows a great deal, and George Murray's triumph of intuition, "limbic tunes."

We would be remiss not to join in happy expectation of Harvard's 350th in September. There was no HMS in those far-off times, and precious little medicine. Now Lisa Derman presents a series of excerpts, "snapshots" selected with the help of Countway Library's Rare Books curator Richard Wolfe, to suggest what it might have been like to have been sick in the old Massachusetts Bay Colony.

Have a good *Veritas*!

—Gordon Scannell

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ALUMNI COUNCIL: PRESIDENT'S REPORT

Year-End Wrap-Up

by Clement A. Hiebert

I wish to share with you the thinking and activity of the Alumni Council this year, a year in which the council, like the school, has reconnoitered a new pathway.

Traditionally the council, as judged by the hours of minutes Will Cochran '52 has dug up, has been a generally passive group, listening to HMS superstar deans proving that HMS has the right stuff in medical education. To be fair, there have been some high marks for alumni over the years: establishment of the building program that culminated in Vanderbilt Hall and creation of the Alumni Fund under the aegis of Carl Walter '32 come at once to mind. By and large, however, listening to reports, making a few suggestions—Warren Point '45 calls the council "the conscience of HMS"—and basking in the glow of the mother school have been the mode.

Unfortunately, meeting for 4.5 days per year makes the council only 4.5/365 as effective as a full-time dean. It's a safe bet that by the time the plane lifts off runway 22R at Logan, a councilor's thoughts have turned from HMS to Hometown, USA.

Early in the year the council decided to devote more time to the school, working harder during meetings and more in between them. We set our goals a little higher and made our pathway correspondingly steeper.

The agenda for the January retreat (see spring issue) represented a prodigious effort, but the chemistry of prepared minds and selected consultants produced ideas galore. Why did it take us so long to learn that three small committees deliberating on problems of alumni, students, and administrative interactions utilizes the remarkable talent of the council so well?

At the spring council meeting, Dean Tosteson reported principally on two matters. The New Pathway has floors, and floors cost money! The April "groundbreaking" for the

Medical Education Center gave us all a chance to listen to Derek Bok and sign our names alongside his and the dean's on a white steel beam which will presumably tie it all together. It was a splendid occasion (see article on the center in this issue).

The dean asked for alumni help in developing a computer system to track students and alumni, so the school can see the long-term results of its selection and educational policies. As I campaigned on this issue, I have special affection for the idea!

By the time you read this, those of you who attended Alumni Day (or read your mail) will have gleaned other news from the spring meeting.

The student essay contest sponsored by the Alumni Association produced 25 entries. James Oliver '87 won for his essay "Social Admit." He received a check for \$1,000 on Class Day and read the essay on Alumni Day. Runner-up Nancy C. Andrews '87 received \$500 for her essay "Huntington's Disease: The New Challenge." George Bernier '60 chaired the selection committee.

On Match Day, fourth-year students had a rousing good party at Quincy Market. Our alumni organization got the credit for this cheerful induction into alumni status.

Paul Ramsey '75 has taken on the council assignment of hosting students looking for clerkships or internships in the Seattle area. Volunteers for other cities are needed.

Under the direction of Bob Lawrence '64, the Alumni Survey Committee is computing responses to a telephone survey regarding alumni attitudes toward the school. More later.

Curtis Prout '41 and Tom Warthin '34 came to the council meeting to argue for reinstituting A.O.A. While students of late have preferred to shun elitism, the council intends to explore the matter of promoting and acknowledging scholarship.

In Joe Murray's absence, occasioned by hopefully transient illness, director of annual giving Dorothy Newell gave an optimistic report on donations to the Alumni Fund. So far, 217 donors have each given in excess of \$1,000.

The Student Alumni Committee of the council is going to work on financial aid, assisting in career choices, and expanding the Seattle host experiment.

A constitutional change, voted on at Alumni Day, will be reported in the next issue. It is the council's opinion that the president needs a couple of years as president-elect before assuming office. Implementation of this change will require the one-time phenomenon of a president serving for two years. Lon Curtis '56, chairman of the Officer's Nominating Committee, will present the details at the council's fall meeting.

You will have heard by now that Will Cochran will withdraw from the Alumni Office upon completion of his three-year term in June 1987; clinical pediatrics has proven Will's greater love. He will surely be missed. David Marcello '56 will head the search committee consisting of Jim Pittman '52, Lon Curtis, A.W. Karchmer '64, and John Stoeckle '47. Recent past president Jane Schaller '60 will serve in an ex-officio capacity.

Finally, I must commend both Dean Tosteson and Dan Federman for recognizing that HMS's single best asset is its talented alumni. Each of you will have received a letter from Dan asking for curriculum ideas for the clinical years of the New Pathway. This rare opportunity is a tribute to us from the school.

As a former Maine guide, I have greatly enjoyed the opportunity to help blaze a trail for HMS without blackflies or black bears. I thank you all for the privilege of serving as your leader, and especially the council for bearing most of the load. □

BOOK MARKS

Roots

LEARNING TO HEAL: THE DEVELOPMENT OF AMERICAN MEDICAL EDUCATION, by Kenneth M. Ludmerer, 346 pages. Basic Books, New York, 1985

by Charles J. Hatem

A well-written history earns its keep by illuminating and entertaining as well as offering that peculiar sense of comfort and frustration which comes from knowing that our problems are not new. Kenneth Ludmerer, internist and medical historian at Washington University, provides in his finely researched and constructed history *Learning to Heal* a masterful tracing of the roots of medical education in the United States.

Ludmerer begins his analysis in the mid-19th century. The Civil War highlighted the inadequate skills of the average physician—deficiencies which mirrored the crude state of American medical education. At the time, the French medical view—that clinical observation was *the* tool for the advancement of medical knowledge—prevailed over the Germanic emphasis on experimentation.

By the end of the 19th century, the improved American school and university system produced better-prepared medical school entrants. Research perspectives came into ascendency, and pioneering efforts of medical educators at Harvard, Pennsylvania, and Michigan set the stage for the profoundly influential contribution of Johns Hopkins. Here, the spirit of the university, research, progressive medical education (learning by doing), and, above all, Osler's development of the clerkship created the standard of medical education for the times.

Educational reform began to spread at the beginning of the new century, but lax state licensing laws allowed proprietary schools to persist and multiply (Ludmerer points out

that the number of such schools doubled between 1870 and 1900). These schools, and others that continued to offer substandard medical education, provided fodder for Abraham Flexner's famous report. Ludmerer takes great pains to point out that most of the reforms vital to the subsequent flowering of American medical education were already in place by the time of Flexner, and that his report failed to acknowledge how far the system had come. Nonetheless, Flexner's work had a profound effect in changing that system and in marshalling societal support for medical education.

Ludmerer recounts well the subsequent history of medical education within this century: the growth of academic medicine with its attendant subordination of the private practitioner, the need for the development of the teaching hospital and the reluctance with which hospital trustees came into that relationship, the growth of biomedical research, and finally the development of the corporate medical school with all its bureaucratic complexities.

Learning To Heal also points out that, while there has been an indisputable evolution in the quality of American medical education, we are far from realizing many of the educational ideals that have been repeatedly identified over the past century. Charles Eliot, at his assumption of the Harvard presidency in 1869, noted, "the actual problem to be solved is not what to teach but how to teach." Ludmerer summarizes the legacy of Eliot's 1871 educational reforms and their effect on HMS:

The primary goal of medical education, in the eyes of the Harvard Faculty, was not to provide students an encyclopedic knowledge of facts but to foster the student's ability to think critically, to solve problems, to acquire new information and to keep up with the changing times.

Eliot evidently did not shrink from confrontation when needed to push through his reforms. As president of the university, Ludmerer relates, Eliot assumed the chair of the medical faculty meetings—a position he retained for the next 40 years. Ludmerer also tells of Eliot's arguments with Henry Jacob Bigelow, then powerful as the long-standing professor of surgery. Eliot had proposed that a written examination be mandatory for graduation from HMS, but Bigelow objected, noting that half the class was barely literate. On another occasion: "Why, Bigelow asked at one meeting, introduce so many changes into a program that had been successful for 80 years? The reason, Eliot answered . . . was quite simple: 'there is a new President.'"

Though Eliot's philosophy was appealing and curricular reform was underway, Franklin Mall, professor of anatomy of the original Hopkins faculty, lamented at the turn of the century:

Reared in a free atmosphere, accustomed to great liberty during his college years . . . (the good student) enters the medical school with intellectual slavery staring him in the face.

Not surprisingly, we find criticisms of medical education in our era expressing the same distress: that thinking has become subordinate to assimilation of facts, biomedical explanation supersedes psychosocial understanding, and passive rather than active learning is dominant in medical school. In my own experience with students beginning physical diagnosis after the traditional one and a half years in the lecture hall, I am struck by how frequently frustrated and demeaned they feel by their medical education—an education that often compromises their curiosity and initiates them into a system where students and practitioners alike have trouble admitting, "I don't know."

The issue, then, has not been a shortage of sensible philosophies of medical education (50 years after Eliot, Ludmerer identifies William Thayer, Osler's successor, as characterizing the intent of modern medical education "Self Education Under Guidance"; much the same message was delivered by the AAMC report of 1932 and the more recent GPEP Report of 1984). The challenge, as Ludmerer sees it, is the reaffirmation of medical education ideals that have been in place for over a century in

the face of the current oppressive personal and monetary costs of medicine. But, as this history of medical education also reveals, change has come slowly; the inertia within the system is enormous.

Ludmerer suggests that the lessons of history reveal the relative futility in trying to 'change the system' by rearranging the curriculum—he argues that thinking physicians come from carefully selected students educated in an environment where education is valued and rewarded. Moreover, the constraints of formal instruction must be recognized and students be allowed to establish close relationships with mentors to experience the central values of doctoring.

Not so clear from this study, however, are blueprints for putting these ideals into educational practice. The book does not describe recent efforts to fundamentally restructure and improve medical school education. As important as these ideals are, insights are critically needed into the *process* issues of success and failure within the area of experimentation in medical education. Without that input and the conviction to act upon it, we will eloquently reaffirm unimpeachable goals that will not find realization. Nonetheless, as prologue, the scholarship and perspective of *Learning to Heal* is worth sampling by all those committed to the education and training of students of medicine. □

Charles J. Hatem '66 is assistant professor of medicine, and associate chief of medicine and director of medical education at Mt. Auburn Hospital.

PULSE

Robinson Named First Reisman Professor

Stephen H. Robinson '58, whose studies of red and white blood cells have led to new insights into leukemia and greater understanding of how blood cells develop under different conditions, has been named the first George C. Reisman Professor of Medicine at HMS.

Robinson has been clinical director of the Beth Israel Hospital Department of Medicine since 1980 and chief of hematology at BIH since 1971. Reisman, a Boston businessman, specified that the professorship be held by a faculty member located at BIH.

In his early work, Robinson discovered that destruction of immature red blood cells (reticulocytes) in certain hematologic disorders produces bilirubin—a pigment formed from the breakdown of heme—previously associated only with the degradation of old red blood cells. He then studied the excess of oversized, immature red blood cells produced in response to stresses such as bleeding. Contradicting earlier theories that these "stress reticulocytes" die soon after leaving the bone marrow, Robinson and colleagues found that they convert to apparently normal, mature cells by losing some of their membrane.

More recently, Robinson has turned to the study of leukemic cells. In leukemia, immature white blood cells fail to grow and differentiate into effective cells, and—according to studies in Robinson's lab—repress the growth of other, healthy bone marrow cells.

Robinson's studies are based on the discovery by other scientists that a number of chemical or pharmacological agents will induce some leukemic cell lines to differentiate into mature cells—at least *in vitro*. If the



Stephen Robinson

same process could take place *in vivo*, these agents could provide a highly specific treatment for acute leukemia.

The variety of inducing agents, Robinson believes, may indicate that there is more than one mechanism to trigger maturation. For example, dimethylsulfoxide (DMSO) appears to target the plasma membrane, but other agents may act "more centrally," says Robinson. "We now need to define precisely the changes in gene expression that are associated with differentiation."

Of the inducing agents, only one—heme—is involved in normal physiology and metabolism. Robinson and colleagues are particularly interested in heme because it may play a role in the regulation of normal cell differentiation.

Heme induces only a partial, reversible differentiation of erythroleukemia cells. Addition of other inducing agents, Robinson and co-workers have found, carries heme-induced differentiation of leukemic cells further along.

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maturation is irreversible," Robinson says. "Cell maturation will occur even after the inducing agent has been withdrawn. Thus, there are early reversible events and later irreversible events, both of which are necessary for the final expression of the erythroid differentiated state."

When Robinson studied drugs commonly used to treat acute myelogenous leukemia, he found that some are also inducing agents.

"One might speculate," he says, "that some forms of chemotherapy for acute leukemia which are intended to destroy cancer cells may actually have the added salutary effect of inducing differentiation. Perhaps that's what makes them successful." □

The White Coats are Coming

A biochemistry lecture is transformed into a rap song, complete with break dancing. A student who received a zero on an exam prays to "Santa Carola" for guidance. A bored admissions director rejects yet another overqualified applicant (Rhodes scholarship, Peace Corps, medical assistant to the surgeon general) in favor

of one who can tap dance. And several scantily clad young people hurry through a classroom: they are, someone explains, "the Nude Pathway."

Yes, it's the Class of 1988's second-year show—a voyage through the group's last day of lectures at HMS (a place, intones a "Twilight Zone" takeoff, of "endless time and cramped space"). One of the lectures reviews the career of medical illustrator F. Netter, M.D.—from his *Nature Morte avec Nembutal I.V. Drip*, through his Cubist and Decubitus periods, to *Librium Leading the People* (after Delacroix), to *The Birth of the New Pathway* (after Botticelli).

In another amphitheatre, the almighty Judah Folkman ("Muslims who once bowed toward Mecca now turn and kneel toward Enders Research Lab," a narrator informs) presents patient Phinneas Gage, complete with crowbar through his skull. "Do you really have a problem, or is it all in your head?" a student asks, before the patient is diagnosed as suffering from iron overload and is treated with chelation therapy.

In "Anatomical Relationships," student Nancy Franklin croons a love song to her cadaver. "Though it's a shame that I never knew your name," she sings, "I don't think you'll ever be the same, since I dissected you."

"The Bradykinin Bunch" explores an HMS professor's home life. "How was your day at the medical school?" the professor's wife asks.

"Good question. Shows you're thinking," he replies. Then he and his wife proceed to quiz daughter Lily and not-so-bright son Upjohn. Asked for a seven-letter word for a benign glandular tumor, Upjohn responds, "Ah dunno, Ma."

"I knew the boy could make it to medical school," his proud father boasts (hearing, of course, "adenoma").

A trip back in time reveals the early medical days of Dan Federman, Dan Tosteson ("actually, I prefer the name Dean"), Elio Raviola (who exclaims "oucha" when he cuts himself while dissecting), and Betty Hay (who can't learn anything without coloring it). Their future plans? "Don't need money; we'll take fame./We'll run a med school with a real big name," they sing in "The Power I Love."

After finally receiving white coats, the entire cast joins hands for a medical version of the hit song "We Are the World." "Where are the wards?" they sing, "Where are the patients?" □



"Dan Tosteson" sings "The Power I Love"



"F. Netter" 's Surrealist view of the urinary system



For a brief time, "F. Netter" was forced to do cookbook illustrations

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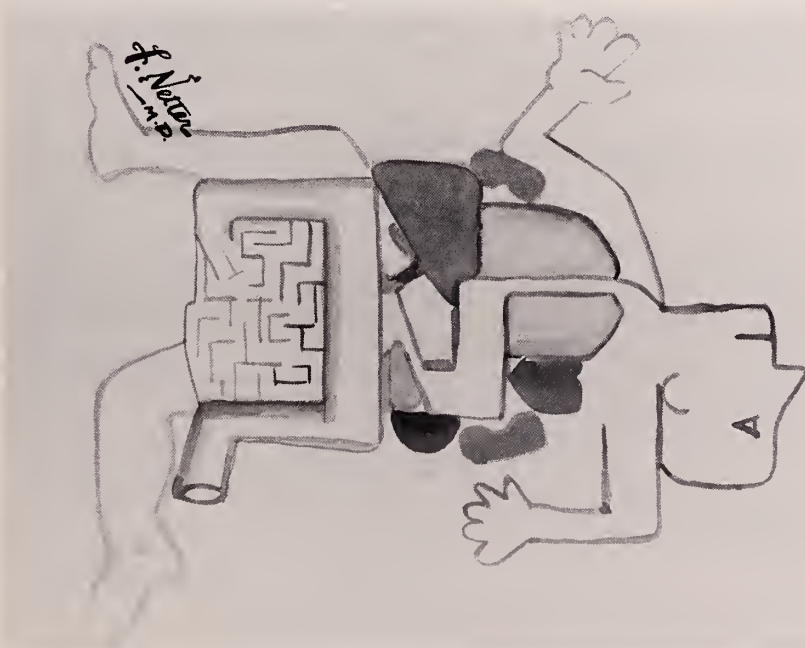
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Students at "Club Med School"



Finale: "Where are the wards? Where are the patients?"



"F. Netter" 's Decubitus rendition of the G.I. tract

And They're Off!

Pediatrics and surgery are neck and neck this year for second place to medicine in the internship sweepstakes. Although in its usual first place, medicine continues a gradual downward trend; it has been nine years since medicine captured over 100 HMS interns. In the 1980s its ranks from HMS have relentlessly slid each year from a high of 70 in 1981 to this year's 42.

Orthopedics holds its own at third place after a rise in popularity in recent years. Ophthalmology's seven is up over last year's four—but no surprise compared to its peak at 13 in 1984. Ob-gyn takes the biggest fall, from 10 last year to two this year.

Sixty-one percent of the class was matched to a first choice; 22 percent got a second or third choice. As usual, about half the 141 newly minted HMS doctors will be training at Harvard-affiliated hospitals.

Medicine	42
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Neurology	3
Neurosurgery	3
Urology	3
Ob-gyn	2
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Hospitals, Dallas
Pathology

Jeffrey Lee
University of Washington Affiliated
Hospitals, Seattle
Family Practice

Kihan Lee
Duke University Medical Center,
Durham, NC
Cardiothoracic Surgery

Sheila Ling
University of California, San Diego,
Affiliated Hospital
Medicine

Hin Yeung Liu
UCLA Medical Center
Preliminary Surgery

Carol Locke
Hackensack Medical Center,
Hackensack, NJ
Transitional
McLean Hospital
Psychiatry

Teresa Longoria
University of Arizona Affiliated
Educational Programs, Tucson
Pediatrics

Charles Lowenstein
Massachusetts General Hospital
Medicine

Albert Maguire
Yale-New Haven Medical Center
Preliminary Surgery
Johns Hopkins Hospital, Baltimore, MD
Ophthalmology

Raul Marquez
Santa Barbara Cottage Hospital,
Santa Barbara, CA
Preliminary Surgery (Orthopedics)

Mark McMahon
Lenox Hill Hospital, New York City
Preliminary Surgery
Orthopedics

David Mego
Brooke Army Medical Center,
San Antonio, TX
Medicine

Arshavir Michael
SUNY at Stony Brook, Stony Brook, NY
Pathology

Alan Michelson
Brigham & Women's Hospital
Medicine

Michael Miller
Beth Israel Hospital
Medicine

Elizabeth Mort
Massachusetts General Hospital
Primary Care

Roger Mosesson
New England Deaconess Hospital
Preliminary Medicine
Presbyterian Hospital, New York City
Radiology

R.P. Murray
Mayo Graduate School of Medicine,
Rochester, MN
Orthopedics

David Mushatt
Brigham & Women's Hospital
Medicine

Audrey Newell
University of Michigan Affiliated
Hospitals, Ann Arbor
Psychiatry

Timothy O'Brien
University of Colorado Affiliated
Hospitals, Denver
Orthopedics

Stephen Onesti
Presbyterian Hospital, New York City
Preliminary Surgery
Neurosurgery

Daniel Ory
Brigham & Women's Hospital
Medicine

Sally Ourieff
Children's Hospital
Preliminary Pediatrics
Massachusetts Eye & Ear Infirmary
Ophthalmology

William Paganelli
Brigham & Women's Hospital
Preliminary Medicine
Massachusetts General Hospital
Anesthesia

Mary Pasinski
Mt. Auburn Hospital
Preliminary Medicine (Neurology)

Barbara Pearl
Rhode Island Hospital, Providence
Primary Care

Robert Penzer
UMDNJ-Rutgers Medical School,
Piscataway, NJ
Preliminary Psychiatry
New York Hospital-Payne Whitney Clinic
Psychiatry

Scott Phillips
Jackson Memorial Hospital, Miami, FL
Medicine (Dermatology)

Eleanor Piel
Beth Israel Hospital
Preliminary Medicine

Michael Pollack
St. Mary's Hospital, San Francisco
Transitional
University of California Hospitals,
San Francisco
Radiology

David Preston
Beth Israel Hospital
Medicine

John Puskas
Massachusetts General Hospital
Preliminary Surgery
Toronto General Hospital, Toronto,
Canada
Surgery

Michael Quinones
Brigham & Women's Hospital
Surgery

Aaron Rapoport
Strong Memorial Hospital, Rochester, NY
Medicine

May Reed
Massachusetts General Hospital
Primary Care

Kurt Reinke
Massachusetts General Hospital
Surgery

Richard Restifo
Georgetown University Hospital,
Washington, DC
Surgery

Paul Ridker
Brigham & Women's Hospital
Medicine

Paul Righi
Dartmouth-Hitchcock Center,
Hanover, NH
Surgery

Jose Rivas
Methodist Hospital, Dallas, TX
Surgery

Elisabeth Rosenthal
New York Hospital
Medicine (Emergency Medicine)

Jeffrey Saver
Brigham & Women's Hospital
Preliminary Medicine
Neurology

Jean Schaffer
Brigham & Women's Hospital
Medicine

Beth Scharfman
New York Hospital
Pediatrics

Jeffrey Schweitzer
UCLA Medical Center
Neurosurgery

Ashwini Sehgal
Massachusetts General Hospital
Primary Care

David Seldin
Brigham & Women's Hospital
Medicine

Uri Shabto
Lenox Hill Hospital, New York City
Preliminary Medicine
Manhattan Eye & Ear
Ophthalmology

Brian Shaffer
Massachusetts General Hospital
Surgery

Lawrence Shin
UCLA Medical Center
Orthopedics

Esau Simmons
Children's Hospital
Pediatrics

Steven Simon
Beth Israel Hospital
Surgery

Holly Smith
Yale-New Haven Medical Center
Pediatrics

Shoshana Sokoloff
Boston City Hospital
Pediatrics

Scott Solomon
Brigham & Women's Hospital
Medicine

Beverly Spencer
Massachusetts General Hospital
Medicine

Eric Stein
Stanford University Hospital,
Stanford, CA
Surgery

Bruce Steinberg
Beth Israel Hospital
Preliminary Surgery
Massachusetts General Hospital/Brigham
& Women's Hospital Combined
Orthopedics

Jennifer Stone
New England Deaconess Hospital
Medicine

David Swerdlow
University of Washington Affiliated
Hospitals, Seattle
Medicine

William Taylor
Beth Israel Hospital
Medicine

William Thomas
Highland Hospital, Rochester, NY
Family Practice

Marc Tischler
Brigham & Women's Hospital
Medicine

John Trieman
Children's Hospital
Pediatrics

Paul Unger
New York Hospital
Medicine

Clifton Van Putten
Massachusetts General Hospital
Medicine

Jose Vega
Massachusetts General Hospital
Medicine

Frank Voss
Brigham & Women's Hospital
Preliminary Surgery (Otolaryngology)

Craig White
University of Virginia Medical Center,
Charlottesville
Family Practice

Patricia White
University of Virginia Medical Center,
Charlottesville
Family Practice

Keith Wilson
CWRU University Hospital,
Cleveland, OH
Medicine

Barbara Wismer
New York Hospital
Medicine

Terri Young
Children's Hospital
Pediatrics
University of Chicago
Ophthalmology

BAHAMA OUT-ISLANDS *Barefoot Elegance*

On a small, tranquil, Bahamian island, nestled among the coconut palms, along a ridge of sand dunes, is the **ABACO INN**. Our ten very private cottage rooms overlook the Atlantic Ocean to the east and the Sea of Abaco to the west. From our informal club-house-lounge, where we serve elegant five-course dinners and a tropical buffet lunch, we have a beautiful view of pink sandy beaches and the breaking surf. The **ABACO INN** is a lifestyle — it's our home and we think it's very special. We offer a warm, leisurely, "away-from-it-all" atmosphere, as well as snorkeling; scuba diving (we're both divers); deep-sea reef and bonefishing; sailing; boating; windsurfing and trips to fishing and boatbuilding settlements on nearby islands. The Inn is just a pleasant walk from the picturesque 18th-century fishing settlement of Hope Town and the historic Elbow Cay Lighthouse. If you're searching for a unique personal experience; if you're in touch with nature and if you wish to escape the rigors of 20th-century urban life and yet retain the comforts, then we would like you to be our guests. Please write, via airmail, for our brochure, or telephone us for reservations and information.

Ruth Maury—
Jerry Whiteleather

ABACO INN

Box R1 Hope Town, Elbow Cay,
Abaco, Bahamas
Tel. 1-809-367-2666



Join Harvard's 350th Anniversary Celebration

A partial listing of the events from Wednesday, September 3, through Sunday, September 7. The Faculties will present over 100 symposia; those sponsored by HMS are listed here. For more information, contact the 350th Anniversary Celebration Office, Holyoke Center 700, Cambridge, MA 02138; (617) 495-3500.

CELEBRATIONS

350th Birthday Party on the Charles. Music and dancing on barges and along both banks of the Charles, linked by a 600-foot helium-filled arch and illuminated by laser images projected onto water. Performing groups include Citystep, the Cambridge Harmonica Orchestra, the Harvard Band with alumni, and the Yale Russian Chorus. September 3, 6-10:30 p.m.

Stadium Celebration. Featuring the Boston Pops, undergraduate performers, special guests, climactic fireworks, and more. Soldiers Field, September 6, 8:30 p.m.

CONVOCATIONS at the Tercentenary Theatre

Foundation Day. A celebration of Harvard's heritage and history. Faculty procession, greetings from several universities, addresses by faculty members and excerpts from student orations from the past. Main address by His Royal Highness, the Prince of Wales. September 4, 10-11:45 a.m.

The University in a Changing World. Major speaker and student orators; recordings that recall moments in Harvard's history during the last 50 years. September 5, 10-11:45 a.m.

Meeting of the Harvard Alumni Association: The University and its Community. Remarks by the president of the Alumni Association; greetings from the president of Radcliffe. President Bok will speak. Harvard medals will be presented to alumni and alumnae. September 6, 2-4 p.m.

SYMPOSIA

I: 19 Symposia Presented by the Faculties. (From HMS, "Genes and Cancer.") September 4, 2-3:30 p.m.

II: 21 Symposia Presented by the Faculties. (From HMS, "Mental Illness in 1986: Social and Biological Perspectives.") September 4, 4-5:30 p.m.

III: 19 Symposia Presented by the Faculties. (From HMS, "Challenges of an Aging Society.") September 5, 2-3:30 p.m.

IV: 15 Symposia Presented by the Faculties. (From HMS and Harvard School of Public Health, "Taking Charge of Your Life.") September 5, 4-5:30 p.m.

V: 14 Symposia Presented by the Faculties. (From HMS, "Health Care: Opportunities and Burdens for the '90s.") September 6, 8:45-10:15 a.m.

VI: 14 Symposia Presented by the Faculties. (From HMS and HSPH, "Medical Technology: Harnessing the Sorcerer's Apprentice.") September 6, 10:30 a.m.-noon.

MUSIC

Organ Recitals by John Ferris, university organist. Memorial Church, September 4 and 5, 5 p.m.

The New World String Quartet in Concert. Music by Arthur

Foote, Elliott Carter (AB '30), and Beethoven. September 4, 8 p.m.

Boston Museum Trio: Chamber Music of the Baroque. Agassiz Theatre, September 5, 7:30 p.m.

The Harvard-Radcliffe Choruses and their Alumni and Alumnae in Concert. Harvard Glee Club, Harvard-Radcliffe Collegium Musicum, and Radcliffe Choral Society present works by Monteverdi, Brahms, Poulenc, Randall Thompson '20, and John Harbison '60. Sanders Theater, September 4, 8 p.m.

Harvard-Radcliffe Orchestra and Combined Choruses in Concert. The orchestra performs works by Brahms and Yannatos. Harvard Glee Club, Harvard-Radcliffe Collegium Musicum, and Radcliffe Choral Society join the orchestra for Benjamin Britten's *Cantata Academica*. Sanders Theatre, September 5, 8 p.m.

An Evening with Tom Rush at Club 47™. Features performances by Tom Rush, Joan Baez, Livingston Taylor, and Bonnie Raitt. Tercentenary Theatre, September 5, 9 p.m.

THEATRE, DANCE, AND POETRY

The King Stag, directed by Andrei Serban. American Repertory Theater, September 3, 4, and 5 at 8 p.m.

GymTransit, a one-hour performance celebrating the art of sport and dance, choreographed by Claire Mallardi, Radcliffe Dance Program coordinator and instructor. Radcliffe Dance Center, September 3, 4, and 5 at 8 and 11 p.m.

The Erick Hawkins Dance Company. Includes the premiere performances of a work commissioned for the 350th. Hasty Pudding Theatre, September 4 and 5 at 8 p.m.

A Celebration of Poets Reading from Their Works. Maxine Winokur Kumin '46, Linda Olenik Pastan '54, Adrienne Rich '51, and Ruth Whitman '44. Agassiz Theatre, September 4, 8 p.m.

FILM

John Harvard: Movie Star. Almost 100 years of Harvard in the movies. Science Center, September 4 and 5 at 7:30 and 9 p.m.

Evening of Film and Dance in the Carpenter Center. Classic American and foreign films, and the premiere of "Syncopations," a work that combines film and live dance. September 4, 8 p.m.

Evening of Film in the Carpenter Center. Classic American and foreign films. September 5, 8 p.m.

PRAYERS AND RELIGIOUS SERVICES

Morning Prayers. Anthem sung by alumni and alumnae of the Harvard Glee Club, the Radcliffe Choral Society and the Harvard-Radcliffe Collegium Musicum (Memorial Church), September 4, 5, and 6, 8:30-9 a.m.

Muslim Service (Phillips Brooks House), September 5, noon.

Jewish Religious Services: Reformed, Conservative, and Orthodox (Riesman Center, 74 Mt. Auburn St.), September 5, from 5:30 p.m.; Orthodox and Conservative Services (Riesman Center), September 6, from 9 a.m.

Services of Thanksgiving in Memorial Church and Parish Churches in Cambridge and Boston, September 7, 11 a.m.



Innovation in the Quadrangle

*Construction is under way on HMS's first
new teaching facility since 1906*

by Lisa Derman

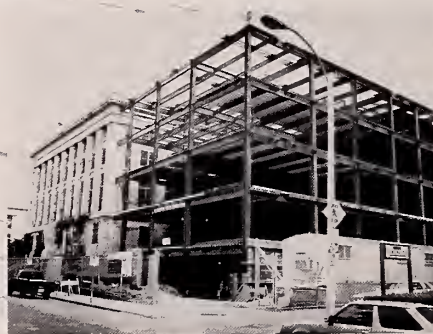
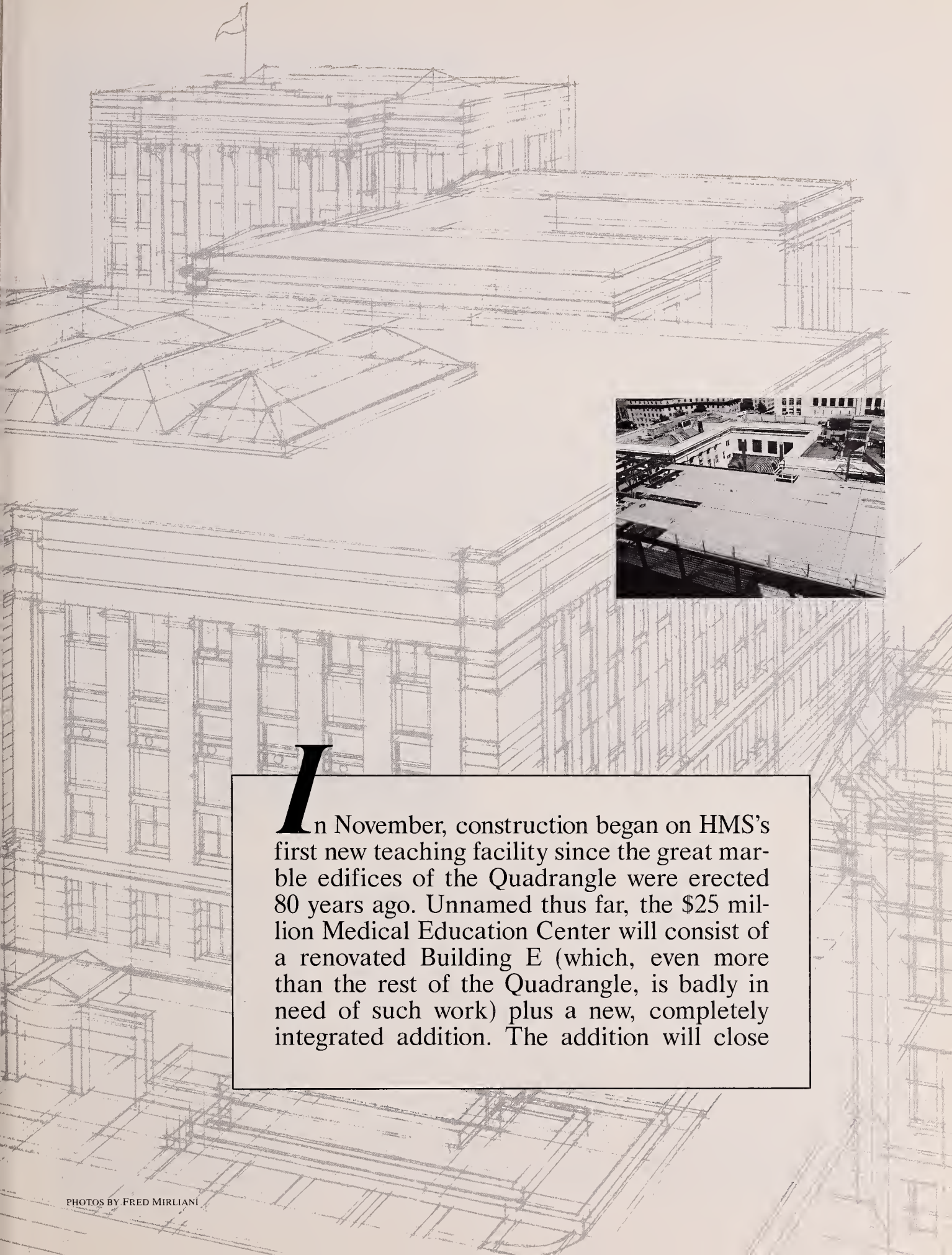


ILLUSTRATION BY ROBERT COMAZZI



In November, construction began on HMS's first new teaching facility since the great marble edifices of the Quadrangle were erected 80 years ago. Unnamed thus far, the \$25 million Medical Education Center will consist of a renovated Building E (which, even more than the rest of the Quadrangle, is badly in need of such work) plus a new, completely integrated addition. The addition will close

I dare say no other faculty is addressing the quality of education more forcefully and creatively than the Faculty of Medicine.

—Derek Bok



Derek Bok at the groundbreaking



Above: Dean Tosteson. Right: signing the beam



the fourth side of the U-shaped Building E, creating a square doughnut shape. The “doughnut” will provide most of the classroom and laboratory space for first-and second-year students as well as meeting and conference rooms; the “hole,” open for three stories and capped with a skylight, will form a large, airy commons where students and faculty can eat meals or meet and talk informally.

At the ceremonial groundbreaking in April, Harvard president Derek Bok praised the innovators behind the new structure.

“I dare say no other faculty is addressing the quality of education more forcefully and creatively than the Faculty of Medicine,” he told the crowd of several hundred gathered

under a tent in the Quadrangle.

The Harvard Corporation had responded to “HMS’s special dedication to teaching,” remarked Bok, by approving construction of the center even though so far the only major gift received is a \$1.5 million grant from the Pew Memorial Trust, contingent on raising an additional \$4.5 million in matching funds.

“Against proceeding were the great Puritan traditions of fiscal prudence that have served this institution so well over the years,” said Bok. “In favor of proceeding was an opportunity to accommodate an exceptionally important creative urge that could be one of those things Harvard is proudest of in retrospect.”

In his remarks to the assembly,

Dean Tosteson spoke about HMS’s mission in educating physicians for the future. Using the metaphor of the variable and constant regions of immunology, he compared research to teaching, and talked about the “extraordinary, staggering” growth in medical knowledge.

“The task of general medical education is to prepare young persons to make use of the vast knowledge we are accumulating,” he said. “It is my hope that the Medical Education Center will be a place where faculty and students can work together more effectively at that task.”

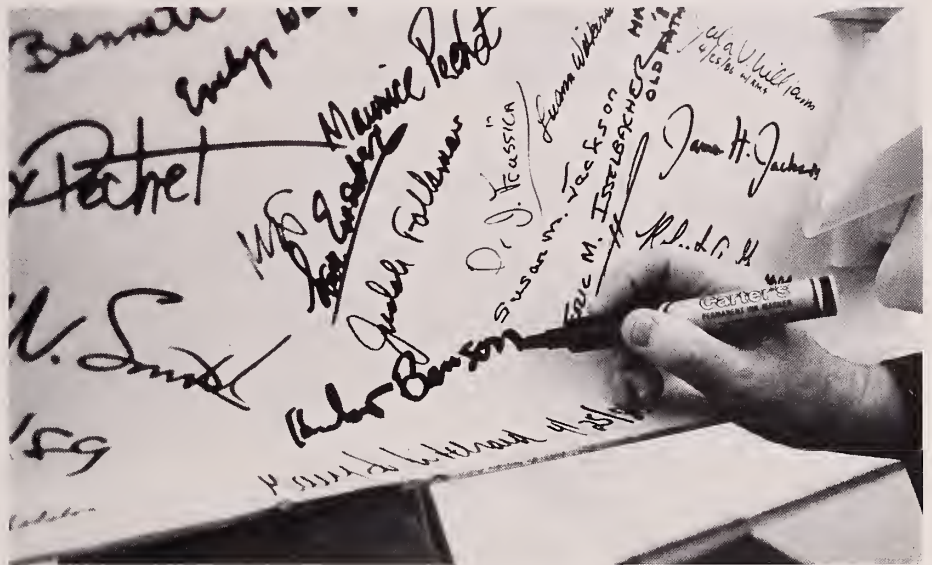
Tosteson read from *The Harvard Medical School, 1782-1906* a passage that reveals the foresight of those who originally designed the Quadrangle:



James Pittman '52 (left) and Ronald Fieve '55 (right) sign



Rebecca Rimel, vice-president of Pew Memorial Trust, signs



Left: Carl Walter '32 signs

[T]he future growth of the buildings was considered and arranged for, in that the wings may be extended to a sufficient depth to form a court in which the light will penetrate to the rooms surrounding it and that these two wings may be connected together at the far end by an additional parallel with the front.

"That's exactly what the architects recommended and what we are doing," commented Tosteson.

Thomas W. Smith '65, chairman of the Curriculum Committee, called the Medical Education Center "an outward and visible manifestation of this institution's interest in and commitment to excellence and innovation in medical education."

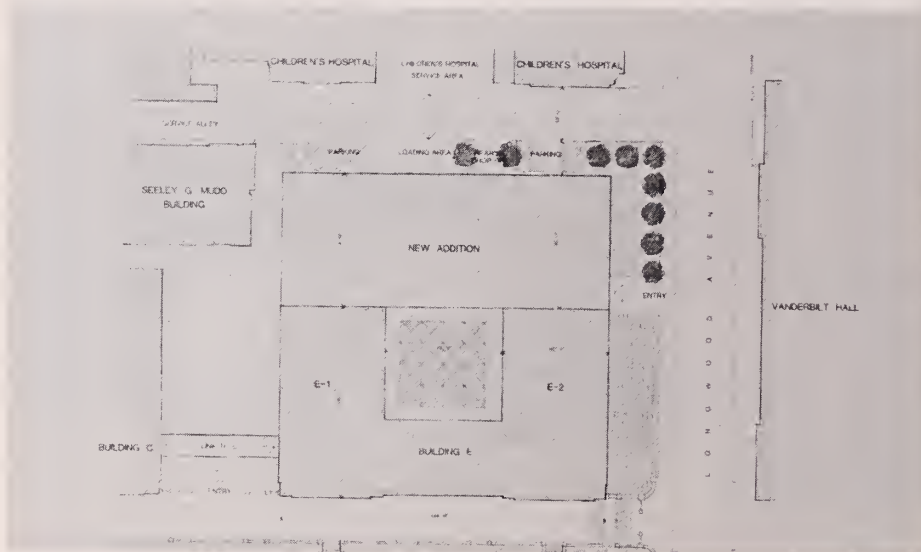
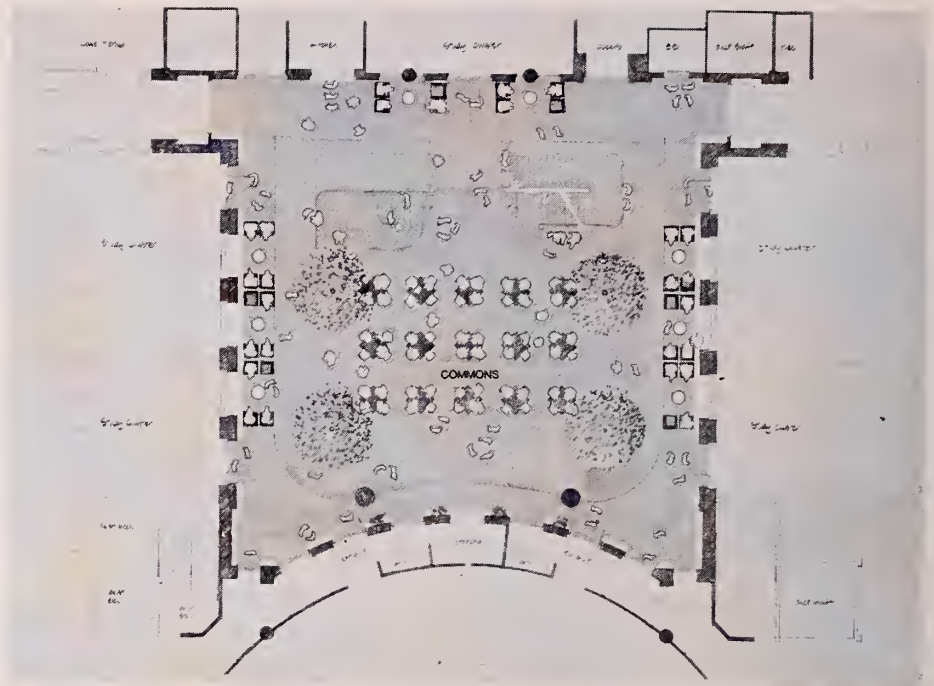
After the speeches, Dean Tosteson

invited all present to sign a white beam, which will later be incorporated into the building. While champagne corks popped and the Harvard Band struck up a tune, administrators, alumni, faculty, staff, students, and other guests, led by President Bok and Harvard Corporation member Colman Mockler, took up black magic markers, crowded round the beam, and affixed their signatures.

Like the Quadrangle, the Medical Education Center was designed after careful planning by both faculty members and the administration. In 1981, Dean Tosteson appointed an ad hoc Committee on Teaching Resources—chaired by S. James Adelstein, dean for academic pro-

grams, and including more than a dozen faculty members—to evaluate existing teaching space and recommend improvements.

The committee found teaching space to be inadequate in lighting, heating, air conditioning, ventilation (particularly in the gross anatomy dissection rooms), electrical capacity, and plumbing. Teaching space is now scattered throughout the Quadrangle, the School of Public Health, and part of the Brigham & Women's Hospital complex. Existing spaces cannot adjust for differing class sizes and functional requirements. They are unsuitable for the small group, interactive learning central to the New Pathway—a teaching style potentially valuable in the standard curriculum as well.



The committee recommended a large increase in the amount of teaching space and consolidation of that space in one facility.

A steering committee chaired by David Bray, dean for management and administration, then translated the report into a formal proposal. Steering committee members—including deans James Adelstein and Daniel Federman, and faculty members Gordon Moore, Edwin Furshpan, Martin Moore-Ede, and Daniel Goodenough—examined the facilities of other medical schools, interviewed students and faculty members, and studied the demand for various types of space. They then evaluated sites and financial feasibility. Their solution is relatively inexpensive, provides

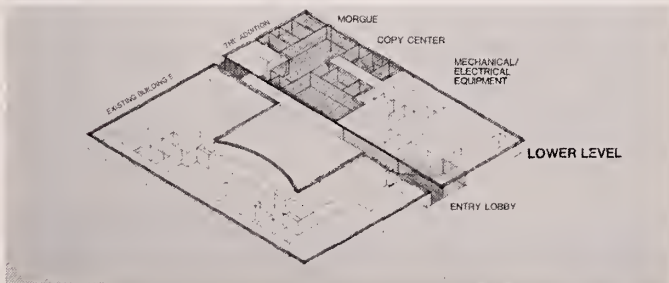
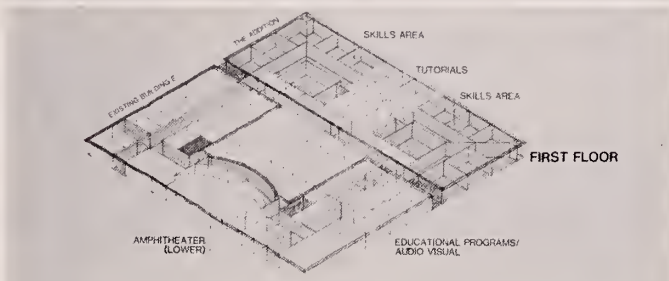
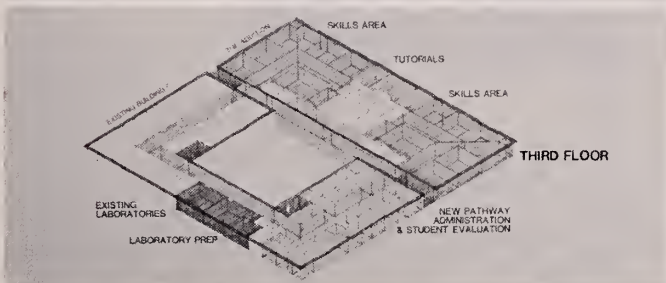
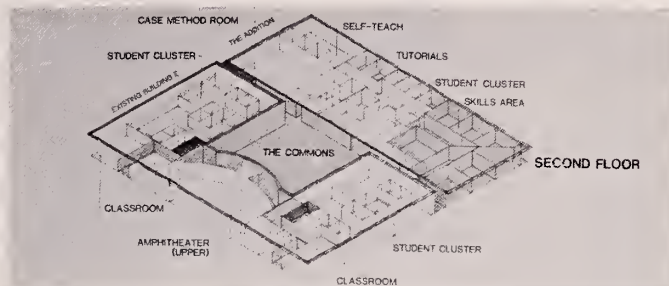
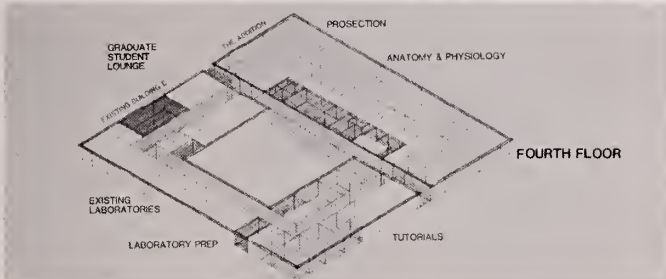
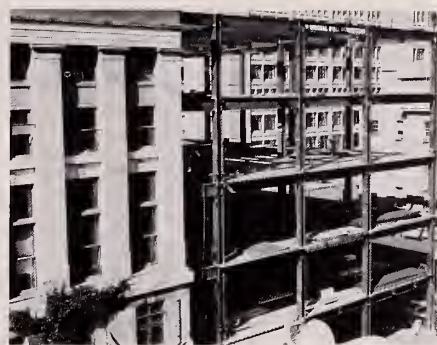
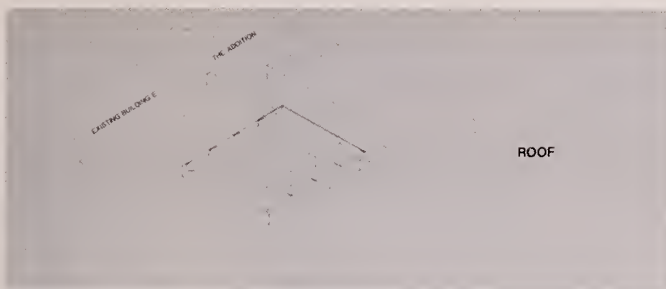
a site that is part of the Quadrangle and close to Vanderbilt Hall (the center's main entrance will be on Longwood Avenue, just across the street from the dormitory), and provides much-needed renovation for the building.

The Medical Education Center—slated to open in September 1987—is carefully planned to adapt to HMS's changing needs well into the next century. Teaching spaces, designed for multiple uses, are laid out so classes can break up into small groups and recombine into larger ones as best fits their needs. Internal walls, though built to be permanent, can be moved with a minimum of disruption. Modular, computer-controlled heating and air-conditioning can adjust easily to

varying room sizes (as well as adapt to the number of people in a room at any given time). Computers and audiovisual equipment can be hooked up almost anywhere, and linked in a building-wide network.

The commons, located on the second floor, will be the building's physical and social center. There students and faculty can eat lunch from a snack bar or just sit and talk at cafe tables or in comfortable chairs, surrounded by trees and plants.

When classes are not in session, the commons classes can hold events ranging from student social events to formal, catered dinners for up to 200 people. Symposia in the renovated Amphitheater E (which will have new seating, lighting, carpeting, heating,



ventilation, air-conditioning, and audiovisual equipment) can be followed by receptions, as audiences exiting from the amphitheater's top rows will step directly into the commons.

Most of the rest of the second floor will be divided into five "student clusters," each of which will contain quiet study areas, individual study carrels, computer areas, small faculty offices, and a conference room.

The second floor will also hold three seminar rooms. Two are traditional classrooms with capacities of 40 each. The third, which will hold 90, is a case-method room modeled after those at Harvard Business School. It is designed to encourage interaction among faculty and large

groups of students.

Five laboratory areas, located on the first three floors of the building, will each provide microscopy and wet labs, one demonstration/lecture room designed to hold 40 students; two smaller demonstration/lecture rooms to hold 20 students each; and conference rooms—31 in all.

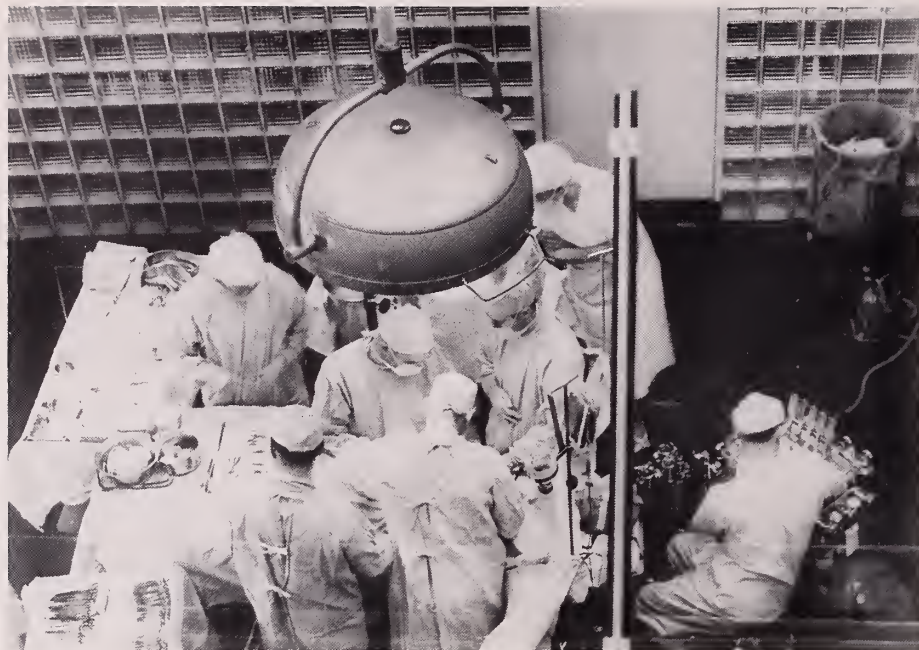
One of the innovations of the center is that each first- and second-year student will have a "home base"—an assigned work station that can hold the student's microscope, other teaching materials, and, eventually, computer. Nearby lockers will hold students' coats and personal belongings.

Special small "student evaluation rooms" on the third floor will allow students to interview and examine pa-

tients (or people simulating patients) while faculty observe and videotape the interaction through one-way glass.

The fourth floor will contain large and small anatomy/physiology labs which together can hold the entire first-year HMS and Harvard Dental School class. A separate air-conditioning and ventilating system will exhaust fumes, keeping the entire building—including the labs—odor-free.

At this writing, the addition's foundation is completed, and all the structural steel is in place. Most of the \$25 million remains to be raised; named gift opportunities range from the student evaluation area to the amphitheater, the commons, and the center itself. □



DECISIONS ON THE FRONTLINES OF SURGERY

Coping with new choices—from the first successful kidney transplant in 1954 to craniofacial reconstructions of the '80s

by Joseph E. Murray

Joseph Murray '43B has been on the frontier of ethical decision making in medicine through much of his career. Perhaps best known for performing the world's first successful kidney transplant between identical twins in 1954, he is also a leader in major craniofacial plastic surgery.

During the '50s and '60s, Murray directed an intensive lab program on transplantation of kidneys, skin, and bone marrow in humans, dogs, rabbits, rats, and mice. For over a decade he performed human renal transplants using the same operation he had perfected in the lab in dogs—still the standard kidney transplant operation used today.

Murray did all his renal transplant work, both experimental and clinical, as a plastic surgeon. During those years he was chief of plastic surgery at the Brigham, and later at Children's. In the late '60s he left the study of renal transplantation for the expanding field of craniofacial surgery. In 1966 he published the first U.S. account of a mid-face advancement.

Formerly director of the HMS Surgical Research Laboratory, Murray is now plastic surgeon and director of the Craniofacial Program at Brigham & Women's and Children's hospitals. Last year he also became chairman of the HMS Alumni Fund.

In 42 years of surgical experience, I have had no ambivalence about "pulling the plug" on patients with inexorable prognoses, or in prescribing potentially life-endangering analgesics for patients in pain. These decisions flowed naturally, although not always easily, from moral imperatives I learned both at home and at school. The medical applications of these principles seem clear and logical: "do no harm," "relieve pain and suffering," and "preserve life."

In college we discussed the principle of the "double effect," or two consequences of a single act, one beneficial, the other harmful. The act is ethical only if the trade-off is proportionate. A 50/50 trade-off of one life for another seems defensible; it seems

The world's first successful kidney transplant operation, December 1954.

disproportionate to sacrifice an eye for, say, a tooth. The adverse effect of any act is tolerated only as an unavoidable harm, such as the loss of a leg to save a life. In other words, we will the good but not the bad. This thought process presupposes the intellectual and moral obligation to increase the benefit-burden ratio.

Ethics may be defined as "right behavior and the duty to pursue it." It aims for the perfectibility of humankind and relates to a universal or divine law. In contrast, morals or mores may vary with different cultures, such as ancient Romans or Aztecs. Without claiming to be even an amateur moral philosopher or ethicist, I will describe and analyze some of my experiences.

Although as medical students and interns we were not offered a formal course in ethics, we were influenced by our teachers in the classroom, the laboratory, and especially the hospital. I recall being on teaching rounds with surgeon David Cheever when I was about two months into my internship. He was weighing the pros and cons of surgery on a 60-year-old mother of 10 who had a symptomatic diaphragmatic hernia. He considered the differential diagnoses, the alternatives in treatment, the family situation, and the emotional status of the patient. He listened patiently. After a bit he encouraged the resident, Orvar Swensen '37, to proceed with his operative plan. As I watched and listened I was suffused with an understanding of the complexity of clinical judgment. Here was the product of lifelong experience, based on solid medical and ethical principles, and tempered with kindness.

The renal transplant program initiated at Peter Bent Brigham Hospital in the late 1940s by physician-in-chief George W. Thorn, and supported vigorously by surgeon-in-chief Francis D. Moore '39, produced a constellation of ethical issues: human experimentation, definition of death, elective nephrectomy in normal and near-normal donors, rights of minors to donate, and the use of criminals as donors.

The medical and surgical services,

as well as the Pathology Department under Gustave Dammin, had their own research programs. On the clinical level we worked closely, seriously, and inquisitively as a team. We trusted and respected one another; we valued one another's opinions and judgments. We were all in this together. When we considered the first transplant between twins, I was advised by a close surgical friend that I should not get involved in this activity because it could ruin my future. At that time most physicians felt it was either extravagantly daring or foolishly unrealistic, or both, to be involved in organ transplants.

We did seek outside help from the law and clergy, as well as from surgeons elsewhere. But the responsibility was clear. The buck stopped at our desk. For several reasons, this burden never was heavy for me; the entire hospital was dedicated to our program, I had performed hundreds of experimental renal transplants in animals with a predictable success rate, we could temporarily control uremia with dialysis, and the patient's prognosis was hopeless without a transplant.

Our program of human experimentation probably could not be started in today's social climate. But

The renal transplant program produced a constellation of ethical issues, from human experimentation to definition of death.

it was ethical because the benefit/burden ratio was proportionate. When our program started there had been no successful renal transplants in either humans or laboratory animals. Most basic scientists considered the problem hopeless. Yet there were enticements to begin a clinical trial. Hemodialysis had just been introduced as a temporary treatment for renal failure (chronic dialysis was a decade in the future), allografts of skin in the treatment of patients with extensive burns seemed to survive better than experimental models would have predicted, and a human renal transplant was reported in the *Journal of the American Medical Association* as a success. It turned out to be a false alarm, but until it was exposed



Press conference at the Peter Bent Brigham Hospital after the first successful kidney allograft, 1959

In 1954, most physicians felt it was either extravagantly daring or foolishly unrealistic, or both, to be involved in organ transplants.

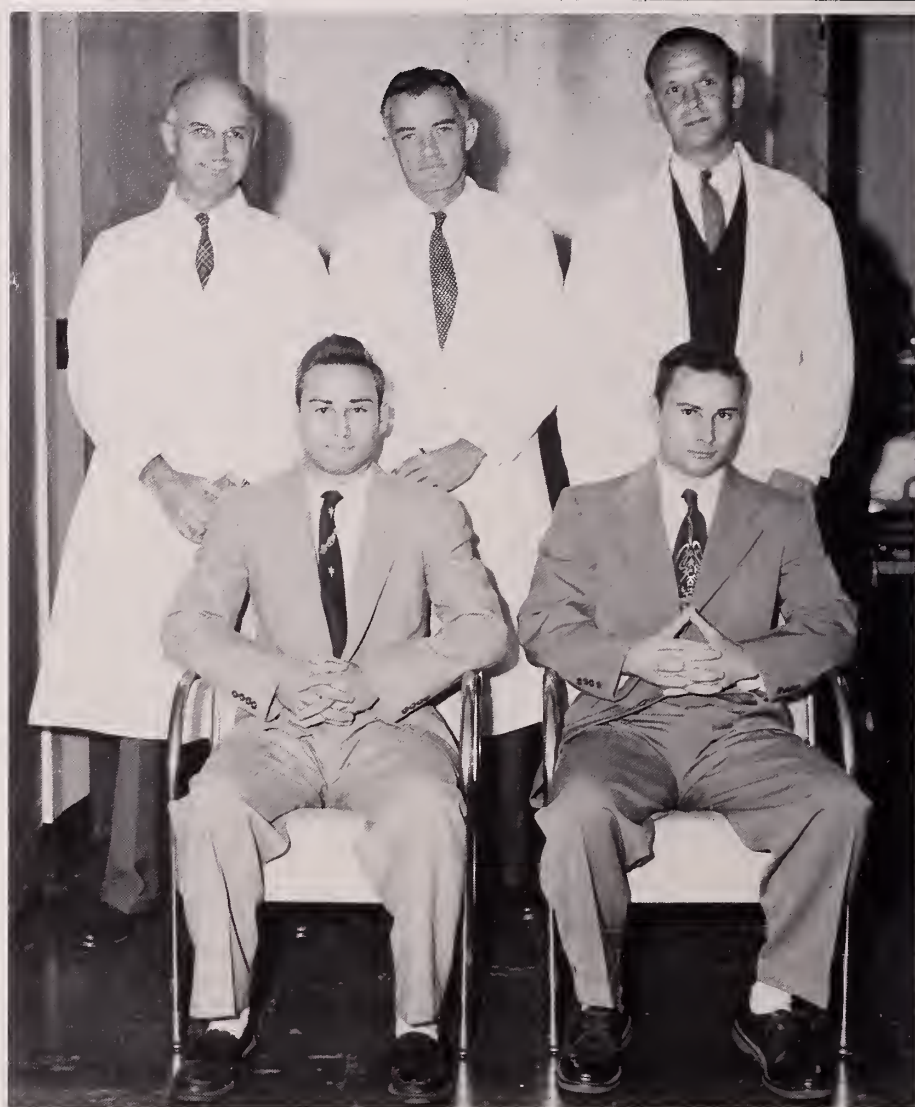
as such it attracted lots of publicity.

So our group thought it ethical to try to give a third kidney to the dying patient. The operation was not hazardous, the recipient site in the thigh could be exposed under local anesthesia, and any temporary function could benefit the patient. To everyone's surprise, in 1951 one such unrelated kidney from a cadaver functioned for several months. We now know that the uremic state itself can dull the immune response of the host, and that is why human kidney transplants functioned better than canine ones.

During the early 1950s we did one transplant at a time to learn maximally from it before doing the next one. Nephrologist John P. Merrill '42 was in charge of renal dialysis, which had then just been developed. He took superb care of the patients' medical problems. I lived day and night with the transplant patients; I had full responsibility for transplant operations, the pre- and post-operative care, and the timing of the use of cadaveric donors. I harvested the kidneys as rapidly as possible after death. We all tried to instruct and educate the neurosurgeons caring for dying patients (prospective donors) about the usefulness of transplants.

We measured renal function, and studied such factors as preservation of the donor kidney and wound healing in uremics. In the early '50s, we published our results on 15 patients. Our Brigham team was by far the most successful and best organized of the five in the world doing kidney transplants.

As we continued the program, we were encouraged by glimmers of success with cadaveric transplants into



The Herrick twins after the first successful kidney transplant, 1954

unmodified hosts. Permission to harvest kidneys from cadavers was relatively easy to obtain once the family was given sufficient explanation. Far more difficult was the determination of the time of death. Prior to the transplantation era, death was defined simply as cessation of respiration and heartbeat.

Many a time, after permission had been obtained from the family and the medical examiner, I waited for the patient's breathing or heartbeat to cease before removing the kidney for transplantation. During the wait, renal function deteriorated. Was it ethical to give the donor intrave-

nous fluids or cool the donor kidney in order to maintain maximal renal function? These maneuvers were no benefit to the donor; they did not add to donor discomfort; they could help the recipient. I usually did both.

I recall being annoyed at the time with the law for not having defined death; I feared being trapped legally. I was relieved when the medical school's legal consultant, William J. Curran, informed us that the time of death from a legal viewpoint is established when a physician declares the patient dead.

A complex ethical problem surfaced in 1954 when identical (mon-

ozygotic) twins were referred to us, one healthy, the other in terminal renal failure. We knew the chance for success with a renal transplant from such a twin was excellent, as a skin transplant between identical twins can survive indefinitely. But was it ethical to remove a normal kidney from a healthy donor when the nephrectomy was not for the patient's own good? To compound the issue, the surgical operation, performed under general anesthesia, carried a definite risk.

We decided to offer the family the opportunity to proceed, for several reasons: we had developed a laboratory model for a permanently successful renal transplant, the operative risk to the donor was minimal, and life insurance companies considered a person with one normal kidney to have the same life expectancy as one with two kidneys. The benefit/burden ratio certainly seemed proportionate as long as the donor understood, desired to donate, and was under no coercion. I knew the transplant would almost certainly function because there was no immunological barrier. I did have to prove, with a test of reciprocal skin grafts, that the twins were truly identical. The success of skin grafts establishes genetic identity, and therefore predicts the biological success of the subsequent twin renal transplant. The odds were about 95 to zero in favor of the patient: 95 percent chance of success and zero chance to live without the transplant. It was a "no problem" problem. After serious thought, we did the transplant; it was successful and has served as a landmark in the field.

When an identical twin donor has a minor physical impairment, the benefit/burden ratio becomes skewed. In 1956, a potential twin donor, a patient of urological surgeon J. Hartwell Harrison '33, was discovered to have a bilateral ureteral reflux. Although her renal function was normal, the reflux was a potential hazard in the event of a future pregnancy. Harrison, who had full surgical responsibility for the living donor, was understandably concerned about the ethical justification of a nephrectomy in this patient. His was the most worrisome role of all, as his patients were

healthy and normal and were expected to come out alive. He and I consulted several experienced clinicians and informed clergy about this unique situation. Obviously there were no medical precedents, because at that time we were the only group in the world with experience in twin transplants.

On a Saturday afternoon in May of that year I discussed the case with Bishop Thomas Riley on his porch in Cambridge. He had been most helpful with our first set of twins. After reflection, he said, "Dr. Murray, it seems that you and your team made the critical decision when you did the first transplant. This current situation is only a matter of degree." In the midst of our soul-searching and worry, his external objective opinion was reassuring.

We did proceed, the transplant was successful, and the donor and recipient subsequently bore normal children without any impairment of their own renal functions. Today both are grandmothers. Incidentally, the recipient, the longest surviving renal transplant patient in the world, was the first ever to become pregnant and bear a child.

These twin transplants elicited

Our program of human experimentation in renal transplantation probably could not be started in today's social climate.

worldwide interest. A transplantation committee was established by the National Academy of Science-National Research Council. I was our group representative to this committee, under whose aegis we later organized an International Kidney Transplant Registry and the Uniform Anatomical Gift Act. This committee was the seedling for the New York Academy of Science biennial conferences on transplantation, which after 10 years evolved into the International Transplantation Society.

When another set of twins, age 17, was referred to our team in 1957, the HMS and hospital lawyers warned us of a complicating factor. They had



From left: Paul Tessier, Joseph Murray, and Lennard Swanson in 1972

Was it ethical to remove a normal kidney from a healthy donor when the nephrectomy was not for the patient's own good?

read in the newspapers that a pair of minor twins was coming to the Brigham from Kentucky to be considered for a transplant. The news, which broke from the twins' hometown, preceded their arrival in Boston. In those early days of transplantation, every transplant was national news.

Because the potential donor was a minor, he himself could not give legal permission for his nephrectomy. Moreover, his parents were prevented from allowing the donation on the grounds that the operation was not for the patient's own benefit; if they did, they could be tried for assault. The only way out was to seek a declaratory judgment from the Supreme Court of Massachusetts. Hartwell Harrison and I testified about our three successful prior experiences with twin transplants and the risk of nephrectomy. Other testimony, requested by the court, came from our psychiatrist, who opined that the donor would be psychologically harmed if he were denied the chance to donate and his brother subsequently died. On these grounds the court assumed legal responsibility for the donor and granted permission for the nephrectomy. In the opinion of the law, the transplant would benefit both donor and recipient.

At that time, I thought the decision a legal subterfuge, but subsequently the intrinsic wisdom behind it became evident. Years later, Fr. J. J. Lynch, S.J., reiterated the concept in *JAMA* (200:187, 1967): "[T]he law of fraternal love—whereby one may do for another what one may legitimately do for self—can also be invoked in justification of donation of an organ."

In 1960, after surgeon Roy Calne and I successfully used immunosuppressive drugs for renal allografts in our laboratory animals, we transferred that experience to patients. My responsibilities included the recipient's operation, the post-op care, and the timing and dosage of the immunosuppressive drugs. For cadaveric donor transplants, I went to outlying hospitals, harvested and cooled the kidneys, and brought the kidneys back to the Brigham in my car. At the hospital the O.R. would be on alert, with a resident ready to start the incision.

After the first successful cadaveric donor transplant was reported in 1963, the need for unified legislation for

organ procurement and a definition of death became more urgent as the demand for kidneys grew. William Curran organized the unified organ donation legislation throughout the United States.

HMS dean Robert Ebert formed a multidisciplinary committee chaired by Henry Beecher, Isaiah Dorr Professor of Anesthesiology, charged to define death in light of the then current medical knowledge. This committee, of which I was a member, formalized a definition of death based on the integrity of brain function. Because the individuality of a human resides in the brain, it follows that if the brain is irreparably damaged, the



Recipients of kidney transplants in 1964. The man in the center (standing behind the child) is Melvin Doucette, recipient of the first successful kidney transplant from a cadaver.

patient is dead even in the presence of heartbeat and respiration. Of course rigid, infallible criteria for irreparable brain damage had to be established before life-support systems could be stopped and donor organs harvested. The "brain death" concept—difficult to formulate, adopt, and teach—gave legal authority to our medical conviction, and provided better-functioning kidneys for donation.

Because of the scarcity of suitable cadaveric donors, one center in the mid '60s decided to use convicts as "volunteer" living donors. It seemed unethical to our team at the time, and it still does. A 1965 Ciba symposium on the ethics of transplantation addressed this question, and concluded that a convict has lost certain rights, including the right to donate an organ. Conference chairman Lord Kilbrandon, of the Scottish Supreme Court, summarized, "When we put a man in prison we deprive him of a large number of his consents; it is perhaps distasteful to confer on him a consent which is not for his benefit but for our own" (*CIBA Symposium, Ethics in Medical Progress*, J.A. Churchill Ltd., London, 1966). In spite of written waivers, the convict-donor always hopes his or her sentence may be lightened. This surmise has been validated by instances when convict-donors have approached the courts or recipients seeking special favors.

Today donor organs are scarce and transplantation success rates are constantly improving. Wealthy and influential families are buying and advertising for organs, often from poverty-level donors. Is it heartless to criticize the grieving parents of a dying child when they appeal for a donor organ through the media? Or if they offer to buy it?

During World War II, I was in a major plastic surgical center where we treated many severe battle casualties and lethal burns. We knew we could salvage some severely burned patients if we used skin grafts from other persons. But skin from others could not survive permanently unless it came from an identical twin. After the war, I wanted to study skin trans-

plants to help burn patients. But the kidney transplant program at the Brigham was already under way—and as the same biological principles applied to kidney as to skin, I figured I would use the kidney as a biological tool rather than skin. The kidney was easier to follow functionally than a skin graft because urine volume and content can be monitored.

Since my experience in World War II, there has been steady progress in reconstructive plastic surgery. Improvements in surgical skills, life-support systems, and diagnostic techniques have combined to produce unanticipated and previously unknown ethical problems. The solutions to these ethical dilemmas involve the same principles we applied to renal transplantation, although the clinical conditions are vastly different. The following two patients, one with a tumor and one with a birth defect, are illustrative.

J.B., a six-year-old boy with a recurrent rhabdomyosarcoma of the orbit (a malignancy of the eye), had had three previous surgical excisions, chemotherapy, and a full course of X-ray therapy. The tumor continued to grow, so in 1956 Sidney Farber '27 referred him for evaluation to neurosurgeon Donald Matson '39 and me. In our previous experience, Matson, Farber, and I never had been able to cure such an extensive and persistent lesion. Post-mortem examination on prior failures invariably revealed that the disease remained confined to the local anatomical area without evidence of any metastatic spread. We reasoned that if we could devise and perform a surgical operation which would remove the tumor completely and still leave a socially and functionally intact patient, we might justify an operation which could save the boy's life.

After discussion with his mother, who was a nurse, we weighed the alternatives: allow the boy to die without pain in a few months, or undergo an operation we had never done before but which might be lifesaving. After working on skulls in the anatomy laboratory, I felt an operation was feasible. The decision involved only the mother and the two surgeons. Matson and I went ahead; it was my first

In the mid '60s, one center decided to use convicts as "volunteer" living donors. It seemed unethical to our team then, and it still does.

craniofacial operation. We were left with a huge defect after resection of frontal lobe, orbital contents, and adjacent bones. I repaired it first with a skin graft and later by a pedicle flap. The patient survived and is living today without recurrence of tumor.

B.D. was born with such a severe facial defect that the family physician, assuming he was mentally deficient as well as disfigured, advised his parents to place him in an institution. Incidentally, he was one of identical twins; the other was completely normal. After 18 months in the institution, he had made no progress at all. The parents took him home against the physician's advice. When referred to me at age five, he had undergone surgical repair of some of the superficial areas, but the major clefting through his mouth, skull, and orbits was still present. His head and face were totally asymmetrical and distorted.

During the next 10 years surgeon Paul Tessier of Paris, France, and I performed a series of reconstructive craniofacial operations on B.D. His looks and function are greatly improved, but he still is not completely normal in appearance. He now attends a regular school, but only after we and his parents were able to convince school authorities that his presence in the classroom would not be a detriment to other students. Today he tests cognitively as well as his twin brother.

In my work with these patients, I have developed a new set of insights. Now in trying to balance the benefit/burden ratio, I must add "quality of life" into the equation; it is a subtle but definite influence. I must look

In trying to balance the benefit/burden ratio of craniofacial surgery, I must add "quality of life" into the equation.

behind the mask in order to balance the benefit against the burden. The influence of facial deformity on a person's psyche is so immense and powerful that one can not always predict accurately the effect of surgical correction. The person's body image may be stable and firm, or precariously balanced. The planning and performance of a surgical operation can expose or erode established defense mechanisms and turn a superb surgical correction into a psychic nightmare.

The ethical and economic justification for the decisions on each of these facially deformed patients may be legitimately questioned. Every day someone—a doctor, nurse, administrator, or social worker—questions our work. When should the surgeon give up? When may one withhold treatment? What makes an operation experimental? Who best can decide the proper management for a newborn deformed baby? When does the economic burden become unbalanced, favoring an individual to the neglect of the general population?

I do not claim to have the answers. I can only reflect on past decisions made on valid principles. I entertain criticisms and suggestions for alternative concepts. Although economics are important in societal planning, all decisions made on the patients presented above were based on the premise that every available resource should be used for each patient.

So much for the past. What are some present dilemmas? New problems confound our cumulative surgical experiences. On rounds at Chil-

dren's Hospital, I recently saw a mentally retarded 15-year-old boy clutching a fluffy stuffed animal appropriate for an 18-month-old child. Born with a myelomeningocele (a defect in the vertebral canal), he had been institutionalized since age two because of brain damage, probably caused by physical abuse. Multiple hospital admissions and surgical operations followed. This admission was for treatment of thermal burns caused by contact with a radiator.

In contemplating the boy and his history, I wondered if previous decisions about his care, no matter how well-meant, had been in his best interest. What were the choices along the way? Was there any time when non-intervention would have been kinder, more humane, or more ethical? Had we tried too hard and done too much? My musings were not about economics, the use of hospital resources, or the physical abuse of children; instead, I wondered how that soft teddy bear gave him solace. What went on inside his head? What potential was lost forever? Was he a "Mozart denied," to borrow a term from St. Exupéry? These thoughts, I suppose, expose

frustration at both my inability to help and the limitations of ethical principles.

Probably the most difficult decisions for everyone—nurses, residents, attending physicians, surgeons—involve premature babies. Our group occasionally evaluates live 20-week gestation babies weighing less than 800 grams; they are treated in one hospital while across the street in another they are aborted. Whether "pro-choice" or "pro-life" on the issue of abortion, one cannot hide from this obvious direct conflict in ethical medical care.

When I started my surgical career, decisions were easier to make. All life was to be protected; we tried to help everyone. Today there are shades of gray which can modify rigid standards. Medical progress is creating new situations which deserve careful, unemotional thinking. Each patient must be evaluated separately as a complex, unique, and precious human being. Decisions on these current problems will be best made by thoughtful and caring physicians trying to apply established ethical principles. □

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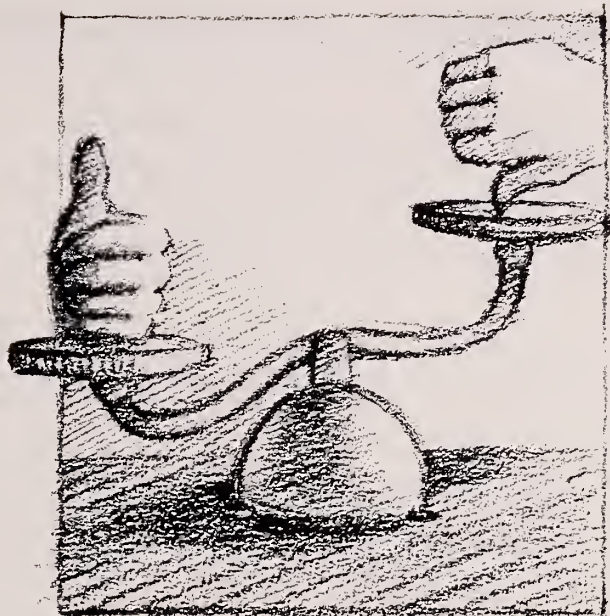
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Tradition and Change in the Teaching of Bioethics

Observations from the field

by Kenneth J. Ryan

Traditional medical ethics, circa 500 B.C. to 1959 A.D., has been under attack in recent years for being based upon professional privilege, paternalism, and only symbolic deference to the Hippocratic Oath. This ethics has been informally imparted by physician-teachers to medical students during their clinical rotations in apprenticeships or teaching hospitals. As our society has become more secularized, the once important religious teachings in medical ethics have played a diminishing role in the education of physicians. Until recently there has been little interest by moral philoso-

phers in applied medical ethics, thus leaving the moral aspects of medicine largely to practicing doctors.

Societies have always been ambivalent about doctors and their ethics, knowing how vital a doctor can be to life and limb, yet resenting the doctor's power and opportunity for material wealth. The physician has occasionally been the butt of jokes for mistakes in diagnosis or for therapeutic failures. The works of Plato, Chaucer, Molière, and Shaw are replete with satire about the incompetence, arrogance, or venality of the "men" of medicine. In spite of this ridicule, physicians have generally

been held in high esteem, and the prevailing medical ethics has seldom been seriously challenged.

Today the traditional medical ethics is under assault by a new ethics based upon patients' rights. These rights are part of that panoply of newly asserted and legislated rights that are the most tangible consequences of the social upheavals in the 1960s and 1970s over the Vietnam War, Watergate, race relations, alternative lifestyles, feminist issues, dehumanizing technology, and revolt against all forms of authority that pervaded our lives.

In 1973, the American Hospital

There has crept into the public mind the notion that ethical experts can unfailingly select the right course of action.

Association approved a patients' bill of rights. It was not Hippocrates, doctors, or the American Medical Association that vouchsafed that patients had a right to "considerate and respectful care"; it was the American Hospital Association. While recognizing the essential personal nature of the doctor-patient relationship, the hospitals invoked their institutional responsibility as justification for intruding into the traditional interaction.

As early as 1971, a patients' rights bill was filed in the Massachusetts legislature, but it took an additional seven years before patients' rights became legally enforceable (Chapter 214, 1979). This bill, established by law in response to public pressures, requires physicians treating patients in hospitals to provide privacy, informed consent, emergency care without discrimination due to economic status, and, for patients with breast cancer, information on all medically viable treatments. The same law provides the right of patients to refuse to be examined, observed, or treated by students or any facility staff without fear of jeopardizing access to care.

A new chapter had been written in the history of medical ethics, but it was written by those outside the profession in response to failures by the profession to deal adequately with the issues. Obviously, lawmakers believed that signs of respect and consideration for the patient were lacking. One can well imagine the recriminations that prompted the unprecedented abrogation of a physician's discretion by putting into law the way options for treating breast cancer should be explained to the patient.

When I entered Harvard Medical School in 1948, the old ethics was still in full flower. Though ethical concerns about biomedical research

had been expressed at Nuremberg in the wake of Nazi atrocities in World War II, it would be almost 20 years before Henry Beecher, HMS Isaiah Dorr Professor of Anesthesiology, would question the ethics of clinical research involving human subjects in the United States.

Our sensitivity to ethical issues was raised when we each, as first-year students, received a copy of Francis Peabody's *Care of the Patient*. We were admonished to "treat the whole patient" so often it became a cliché. With a resurgence of interest in psychiatry during those years, "whole" included psychological as well as physical problems. Holistic medicine had not yet become popular.

Our caring professors admonished us students, as well as other professors, to be sensitive about talking in front of patients during rounds, but the insensitive public demonstration of patients for teaching purposes in the Ether Dome and other hospital auditoria was commonplace. As for truth telling, one instructor advised our student group that he never told a patient if he or she had cancer. When we incredulously asked how he would respond if the patient asked him directly, he insisted he would simply lie. We were not impressed or converted. We were also appalled by the director of an obesity clinic who insisted on calling his patients "fat slob" in the expectation that it would shock them into dieting. It is extraordinary that these experiences on rather minor rotations in the third year of medical school should have made such a lasting impression.

The Class of '52 had three blacks and seven women. Racial and feminist issues were not yet a part of the ethical agenda nationally or at medical schools. In 1948, it was still against the law in Massachusetts to provide advice on contraception. It would be almost another decade before then professor of obstetrics Duncan Reid

would encourage then freshman Massachusetts State legislator Michael Dukakis to introduce a bill to make family planning legal. HMS taught nothing about either contraception or abortion, and education on human sexuality was unheard of. It was as if none of these subjects existed. It was some 10 years after I graduated from medical school before interest in medical ethics became widespread. Setting the stage for the ethical debate on abortion which has so polarized society required a rubella epidemic in the 1960s, the advent of amniocentesis and prenatal diagnosis, and a highly publicized case of a patient who had to go to Sweden for an abortion.

Although advances in technology have heightened ethical concerns in recent years, the problems of euthanasia, withholding or withdrawing treatment, truth telling, informed consent, and equitable access to health care have long been with us. They were just never on an open public agenda, and the privacy of the patient-physician interchange was seldom breached.

I was introduced to the public debate on biomedical ethics when, from 1974 to 1978, I chaired the National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research—formed by Congress to respond to a wide range of highly publicized ethical "horror stories" which, although few in number, had dramatic impact. These included instances of failure to obtain informed consent or provide adequate protection for human subjects involved in research on cancer, syphilis, hepatitis, or behavior.

All the commission deliberations were held in open sessions under the newly enacted "sunshine law." There were cases of medical practice supported by the government in which minors were sterilized without proper consent. There was public outrage at

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the practice of psychosurgery and at research without adequate safeguards on vulnerable subjects such as children, fetuses, prisoners, the retarded, and the mentally ill. The CIA had supposedly engaged in "research" with psychedelic drugs on unsuspecting subjects and the FDA had approved pharmaceuticals which were later found to cause cancer. Finally, there was concern about the impact of new medical technologies on life in general. The commission made recommendations which influenced federal regulations on a wide range of research and medical practice funded by the government.

The commission's most fundamental report, the "Belmont Report," set forth the ethical principles that should underlie the conduct of research. These principles—which included respect for persons, beneficence, and justice—were to be reflected in the practices of informed consent, risk-benefit analysis, and fairness in the selection of research subjects and equitable access to the fruits of the research. In the 1980s the successor President's Commission for the Study of Ethical Problems in Medicine (and biomedical and behavioral research) embraced similar principles and recommended their application to the practice of medicine.

Over the past two decades, biomedical ethics has become a distinct discipline with its own institutes, medical school and university departments, growing literature, and scholarly interest in the application of moral philosophy to what people do in the real world. Although physicians have been among their numbers, most bioethicists have been drawn from the ranks of philosophy and the social sciences; the time-honored tradition of professional privilege in moral matters related to medicine has been essentially broken. In the end, however, it is still the physician who must

master and understand the ethical nature of the physician-patient relationship.

There has crept into the public mind the notion that there are ethical experts who can unfailingly select the right course of action when faced with an ethical dilemma. My commission experience suggests that this idea is not accurate. When the commission asked eight philosophers whether it was ever morally right to do research on the fetus, we received eight different responses, ranging from an unequivocal yes to an unequivocal no. When we asked four philosophers to define the ethical principles which should underlie our deliberations, we received four options. The experts often appeal to John Stuart Mill or Kant when one might better appeal to common sense and common experience. In my own readings, I've found the writings of the American pragmatists—Charles Sanders Pierce and William James (from the Harvard metaphysical club), as well as John Dewey (the first instrumentalist pragmatist)—to be most congenial to a physician's ethical education, since they relied so much on common sense and common experience.

The pragmatist tradition attempted to reconcile Darwinian evolution and advances in technology with human needs and aspirations, an ethical agenda not too different from that of medicine. Although long overshadowed by analytical philosophy (which, along with logical positivism, succeeded and eclipsed pragmatism), there is a pragmatic thread in the works of many analytic philosophers such as Quine, Wittgenstein, Sellars, and Rorty.

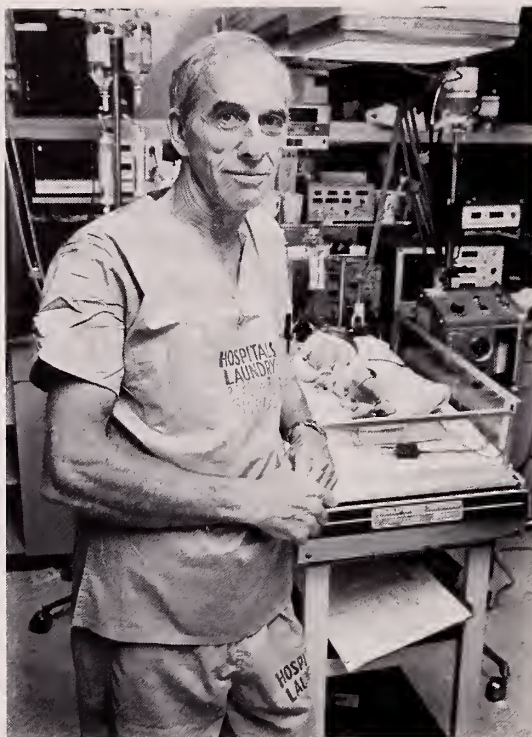
I hope the proposals in most medical schools for formal ethics courses—which will almost certainly be edifying—will expose the students to a

broad range of moral and human history, including the pragmatic tradition, rather than limiting ethics to a discussion of utility, rules, and rights. It is, after all, a combination of the goodness of our intent, appeals to the consequences of our moral actions, and our adherence to moral principles that must guide medical practice.

Doctors often complain that they are unfairly singled out to adhere to a high moral standard when the society around them is more amoral and immoral than anyone would care to admit. It's hard to be a "good" doctor in a society that is racist, totalitarian, discriminates against women, worships material wealth or technology, or imposes sanctions on sexual and reproductive freedom. I imagine that being held to a higher standard goes with the job. In the recent past, however, others in positions of power and public trust have shared the moral blame for social ills with those in medicine. We can be "good" doctors more easily today than 40 years ago because—due to the positive consequences of the social unrest of the 1960s—we live in a more (however slightly) just society.

How can we convey our ethical standards and concerns to students? After being on the HMS scene off and on for almost 40 years, I believe we could do worse than what was done when I was in medical school. Give each student a copy of Francis Peabody's *Care of the Patient*, exhort the students to treat the "whole" patient, and, last but not least, practice (in our teaching hospitals) what we preach. □

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THE FORCED FLOWERING OF A MEDICAL ETHIC

Inside the newborn nursery

by Will Cochran

Like Joe Murray (see article in this issue), Will Cochran '52 has been on the frontier of ethical decision making in medicine—in his case, the new subspecialty of neonatal medicine. Cochran is currently associate clinical professor of pediatrics at HMS; pediatrician in charge of Newborn Nurseries at Beth Israel Hospital; on the faculty of the Joint Program in Neonatology at Beth Israel, Brigham & Women's, and Children's hospitals; and director of Alumni Relations.

My first real introduction to even the idea of a medical ethic came about during my medical school years in the 1950s, when Herman Sanders of Manchester, New Hampshire, attempted to end the life of one of his terminal cancer patients by injecting air into her antecubital vein. This

action, widely publicized in the Boston papers, was hotly debated. I remember arguing at length with my mother-in-law that what is now termed euthanasia should not be done without the patient's knowledge. I didn't know if I, as a doctor, could bring myself to pull it off if I was asked to, though I could see myself getting

involved with passive euthanasia (withdrawing support). Others felt any form of euthanasia was dead wrong.

Not until the early '60s did I again become so acutely aware of the need for an ethical stance. I was asked to care for a newborn infant who had obvious major serious congenital abnormalities. At my behest, this infant received some technical support—gastrostomy and IV feedings with occasional antibiotics thrown in. After weeks of struggle, accompanied by much agonizing on the part of the parents as to what was happening to and what was to become of their daughter, as well as some soul-searching on my part as to what I was accomplishing, the infant expired.

After informing the parents that their baby had died, I called the obstetrician who had delivered her to let him know. He said he thought in the old days things were handled better. Taken aback by the remark, I asked how that might be. He said that he had heard that when women were delivered under scopolamine (and therefore had no conscious recollection of their delivery), it had not been uncommon, when an infant was born with severe deformities, for the obstetrician to call for a pail of water and “hold the infant under.” The parents were told that their infant had been stillborn, but was very anomalous, the diagnosis needing further confirmation by autopsy. This obstetrician felt that the agony of watching their baby die would have been such trauma for the parents that the method of the old days actually was more ethical in the long run. Certainly there was no long, drawn-out anguish and agony while the parents wondered (as in my case they had) whether their baby would live or die.

The story made my skin crawl, but I didn't say anything too negative, as I was just starting out in practice. I never saw or heard of such an action during my years in pediatrics, though some older obstetricians have admitted, when I recounted this story to help cleanse my soul of it, that they had heard of the practice.

The next phase of my ethical development, if one cares to call it that, came in 1969 when Boston Lying-In Hospital acquired its first successful newborn respirator. At last we were able to tide over a number of babies who previously would have died, particularly those with severe hyaline membrane disease. This initial success soon raised a new problem: several babies simultaneously needing

respiratory assistance, but only one respirator, which often already had a baby on it.


After some six or eight months, we analyzed our results and made two decisions. First, no baby under 2.5 pounds should be put on the respirator because none had yet come off alive. Second, if any baby was on the respirator over 150 hours (our data up to that point showed that babies on the respirator that long did not come off it alive), a new baby needing a respirator took preference over the one on it. The one on the respirator was then taken off. Since these rules were made up by us pediatricians, they did not cause us extra anguish, though following them was never easy for doctors or nurses.

We learned to set up parents beforehand, not telling them we had a respirator if another baby had just recently started on it. If the respirator was available, we would tell the parents that if it wasn't successful within the first 120 to 130 hours it probably wouldn't be, and that we would discontinue it after that time, so as not to prolong the agony of their baby's “certain” death. This explanation prepared the parents so that, if a new baby needed the respirator, they would understand why their infant, who had struggled along on the respirator for over 150 hours, was taken off and allowed to die.

If no new baby happened to need the respirator, we would let the first baby stay on it, though for several more months no baby came off alive after more than 150 hours. By the time that happened, we had two respirators.

During these times parents were given little, if any, say in the real decisions. We needed to keep our options open only to ourselves about critical decisions so the respirator could be used “fairly.” The parents simply agreed (or didn't agree) to let us try the respirator. Then, with our carefully worded prognosis, we had room to act.

By the mid-1970s, all special-care nurseries showed real improvement in survival of infants with respiratory diseases, mostly consequent to improved care and the now adequate supply of even more sophisticated equipment. However, many more babies kept alive on respirators for months at a time went on to develop chronic lung disease. Parents became much more involved in their



With the hospital's first successful newborn respirator, we soon had a new problem: several infants simultaneously needing our one respirator.

In the mid '70s, parents began to voice concern about how long we planned to struggle with critically sick infants who showed no obvious signs of improvement.

babies' day-to-day care, partly because that care was now so successful we were proud to show it off and partly because many of the old shibboleths about keeping parents out of nurseries for fear of spreading infection were being proved wrong.

Some parents began to voice concerns about how long we planned to keep struggling with their critically sick infants who, it seemed, were being tortured beyond reason without any obvious sign of improvement. I became more and more convinced—perhaps adamant—that parents should have a lot of say when we, the care givers, were discouraged about their baby's future. In such situations I thought of how I would feel were that baby my wife's and mine; I always felt I would be furious if someone took such a decision away from me. Other doctors, younger and often without children of their own, felt it was not fair to burden a parent with such a decision. Incidentally, the daily chronic stress on parents, whether or not they were deeply involved with their baby's care, more often than not seemed divisive to their relationship—though on a rare occasion it seemed to improve it.

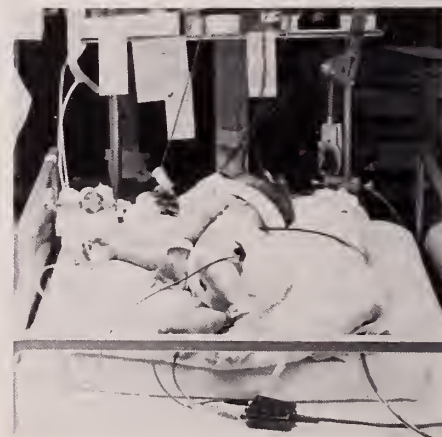
Only certain parents wanted to be involved in such decisions. We asked, but did not force, parents to tell us how they felt; some let us know their feelings earlier. When the outlook was extremely bleak and the parents became more and more anxious that care be discontinued, I found myself more willing than many of my colleagues to agree, so long as all the professional care givers felt comfortable—including the nurses, who wanted to and did become more involved in deciding how long and to what degree care should be escalated. All this ethical decision making, by the way, took place well before the more recent Baby Doe cases became publicized, though Karen Ann Quinlan's case was well known, as was the Saikowicz case.

In years past, a few babies were "let go" right at birth after a quick judgment was made about prognosis. Today even infants who appear markedly abnormal or desperately ill at birth are resuscitated with whatever technical and biochemical measures are available. After this initial resuscitation, physicians can make a more deliberate and accurate assessment of the baby's problems in the next minutes or hours. This almost univer-

sal resuscitation plan has led to an occasional infant getting into a prolonged chronic state before dying. Conversely, it has saved the lives of a number of infants who have looked very poor at birth, yet in a short time have been completely "turned around."

Another new twist occurs when a pregnant woman comes to the hospital in premature labor, with a fetus at the edge of viability, hoping to have her baby held *in utero* by labor-suppressing drugs. These drugs more than occasionally fail to halt labor. The mother is then informed that her extremely premature baby will in all probability be initially resuscitated at birth, despite the mother's often fervent desire that at such an early gestation nothing heroic be done. One such mother was quite upset about our planned resuscitation of her 25-week-gestation infant. A physical therapist, she took care of infants with cerebral palsy and didn't want her baby to suffer from that disorder. Luckily her baby needed little resuscitation, though he was on a respirator for some time. As time went by and no complications of note occurred, she became one of our most attentive mothers. By the time her infant was discharged, she had largely forgiven us for not listening to her initially.

In sum, we neonatal doctors have gone from a time when the doctor alone made major decisions that



could sometimes fairly be called active euthanasia, to the present, when a team of care givers (which includes the parents if they wish) makes decisions just as fairly called passive euthanasia. You might say we've gone from the big lie to reasoned truth. □



Who We Are and What We Do

Reflections from a moral philosopher turned physician

by Edward M. Hundert

For the past five years I have been teaching medical ethics to first- and second-year medical students at Harvard. At the last class every year, after a semester of struggling with such classically problematic issues as life and death, pulling plugs, committing the insane, and telling noble lies, the students always ask me the same question: Does my formal training in ethics help me when I face ethical problems in my own medical practice? Not an easy question to answer. The students generally look disappointed when I tell them that, in many ways, it makes my life more difficult.

It is a question worth exploring in some detail. Certainly one advantage which comes with advanced training

in philosophy is the option of beginning an answer by extending any question to its most generalized form—an option I shall seize upon here (with a promise to return to the specific question eventually!).

Let me begin by exploring the general relationship between one's background and one's approach to ethical problem solving in medicine. Discussions of cross-cultural ethics are full of dramatic examples, such as cultures in which the elderly are sent out onto ice floes to die; one cannot help thinking that physicians from such a society would have fewer problems than we do when terminating the heroic measures keeping an elderly comatose patient "alive."

In the British National Health Ser-

vice, dialysis is not available for patients over 65 years of age. This rule is hardly a consensus about sending all elderly people out to the ice floes, but perhaps it represents the next step on the road to the "Boston (mecca-of-medicine) culture" in which all people regardless of age are provided with ultra-expensive technology to keep them alive as long as possible (sometimes even against their own expressed wishes). At the other end of the continuum from obvious cultural origins, there are the multitude of subtle differences in background which generate a host of conflicts between different approaches to ethics in medicine.

My course, titled "Moral Philosophy and Medicine," attempts to teach

The students always ask me the same question: Does my formal training in ethics help when I face ethical problems in my own medical practice?

how to apply the tools of moral philosophy to ethical problem solving in medicine. (The title also leaves as an open question whether a separate "medical ethics" actually exists.) The point is not to search for universal philosophical rules which would dictate ethical medical decisions. The idea, instead, is to acknowledge the multiplicity of seemingly incommensurable values which conflict around the facts of any given ethical problem, and then to use the philosopher's tools to balance them.

Doctors are forced to make unpalatable trade-offs between such values as confidentiality and safety, privacy and telling the truth, the quality and quantity of life, and a patient's liberty and welfare. As the students observe themselves and others using the scale of their own consciences (which are forever recalibrated by experience) in a variety of types of cases, they learn that one's moral views—on abortion, euthanasia, confidentiality, truth-telling, commitment of the insane, corporate medicine, national health policy—are not unrelated one from the next. Instead, these views represent a pattern of value-balancing which defines an underlying set of moral principles. Thus, different patterns of value-balancing reflect the different moral principles dividing even perfectly "ethical" people. And in any given case, of course, the scale inevitably has to tip one way or the other: even the best choice leaves us compromising some value we hold dear, feeling like we made some sort of mistake. That is why moral dilemmas are truly dilemmas.

By examining the various patterns of value-balancing which emerge each year, the class typically begins to notice the effects of differences in background. The students in my ethics class always divide along many parameters: those whose parents were doctors and those whose parents were not, those who came to medical school after an extended time in the working world and those who came straight

from college, those who have suffered a great deal in their lives and those who have been more fortunate.

The broadest and most striking division breaks down along traditional lines: male versus female. Every year I use the following well-known true case from the literature to focus a discussion on issues of truth-telling in medicine:

A physician who practices in a small town receives a call from a good friend with whom he plays golf regularly. It seems that the man recently attended a convention in another city where he contracted gonorrhea. Since his return he has had sexual relations with his wife, who is also a patient of the physician. In fact, the physician delivered the couple's four children. The man explains to the physician that he has never had relations with other women before, that he has obviously made a terrible mistake, and that he is sorry. He explains to the physician that he fears for his marriage if his wife learns the truth. Since the physician will very soon be giving his wife a routine examination, would he treat her but conceal the diagnosis?

This is a wonderfully instructive case, especially once the class agrees (to make it more difficult) that we should assume the patient is correct and that the truth will undoubtedly create a broken home for the four children. After one and a half hours of discussion, the students vote each year on what they would do. The class usually focuses on the expression "conceal the diagnosis" and those who want to "conceal the diagnosis" usually find creative half-truths to avoid lying—such as, "it seems you have a bit of a genito-urinary tract infection. It's nothing to worry about. I'll give you some antibiotics and it will be fine."

Over the several years I used this case, not a single female student voted to conceal the diagnosis. There were always a handful of male students who voted to do so, and many of them also took the further step of saying they would lie if the wife pressed

them for more details about the infection. Others would try to conceal the diagnosis, but give up if they actually had to tell a lie. But never a single female student.

What accounts for this division of the sexes? Is it simply the prejudices, scars, and inclinations which come from our personal histories, or is it something more subtle? In her book *In a Different Voice* (Harvard University Press, 1982), psychologist Carol Gilligan suggests that female morality differs from male morality, but in a way that would suggest the opposite outcome. According to Gilligan, males traditionally think in terms of universal moral rules (such as "never tell a lie"), whereas females are supposedly more inclined to think of values in terms of the particular circumstances. Here, the utilitarian pull of the marriage and the children seemed to outweigh the moral imperative against lying for the males rather than the females.

In order to test an alternative hypothesis, this past year I gave out the following case:

A physician who practices in a small town receives a call from a good friend with whom she plays golf regularly. It seems that the woman recently attended a convention in another city where she contracted gonorrhea. Since her return she has had sexual relations with her husband, who is also a patient of the physician. In fact, the physician delivered the couple's four children. The woman explains to the physician that she has never had relations with other men before, that she has obviously made a terrible mistake, and that she is sorry. She explains to the physician that she fears for her marriage if her husband learns the truth. Since the physician will very soon be giving her husband a routine examination, would she treat him but conceal the diagnosis?

In stark contrast to the gender bias revealed for several straight years in the original version of the case, this year three out of the five females in the class voted to conceal the diagnosis, along with the usual handful of males. I do not know if these data are statistically significant, but they are certainly suggestive. (Should I have filed with the Internal Review Board to get approval for human experimentation before changing the pronouns in the case? Was it ethical?) After the vote, we spent the end of the class this year reviewing the above information and gathering the class's ideas on why the gender bias broke down when the pronouns were changed.

That was when the notion of “background” was addressed by the class.

It is widely believed that the Golden Rule stands at the foundation of morality. One is charged to “do unto others as you would have them do unto you.” Immanuel Kant elaborated on the meaning of the Golden Rule when he suggested, in effect, that the defining characteristic of moral rules is that they are “universalizable.” That is, to bear on what we mean to call “ethics,” a rule must have the property of applying equally to anyone in the same circumstances. Thus, both the traditional Golden Rule and Kant’s “universalizability” criterion instruct us to “put ourselves in the other’s place.”

The problem is that when we put ourselves in the other’s place, they are no longer in that place: we are! Why should we believe that we are acting ethically when we make a decision based on the premise that we are on the respirator? Indeed, if the patient on the respirator and I shared exactly the same personal history, character, religion, relationships, and values, my decision would not be so difficult. It is precisely because it is a different person in that place—with his or her own personality, religion, and family background—that the problem is so difficult.

In his *Ethics—Inventing Right and Wrong* (Penguin Books, 1977), philosopher J.L. Mackie identified three separate levels of Kantian universalizability, three degrees to which we can imagine putting ourselves in another’s “place.” The first level of universalizability simply insists that proper names not be attached to our moral rules. When I say, “You, John Doe, morally ought to do X,” I am presumably committed to the principle that Joe Smith should also do X if he were in the equivalent situation, as should I if I were in that situation. It is difficult to conceive of a morality in a democratic society which does not include at least this basic level of universalizability of moral rules. (Monarchies allow for a separate morality for the monarch, but we supposedly hold our president to the same standards of truth-telling and promise-keeping as anyone else.)

In the second level, we put ourselves in the other’s place, still realizing that we are considering ourselves in that place—with our own ideas, passions, values, and quirks. Mackie suggests that most enlightened views

Why should we believe that we are acting ethically when we make a decision based on the premise that we are on the respirator?

of morality include this second level of universalizability, where we do not merely treat the person equally as we would anyone else, but take the extra step and do unto them as we would want were we in their shoes.

The third level is, of course, where things get tricky. At this level we would not only put ourselves in the other’s place, but imagine that we had that other person’s characteristics, beliefs, values, and so forth. Here, Mackie is a bit more guarded about our obligation to universalize at this level. Obviously we can never know completely what any other person thinks, feels, believes, and desires; and we presumably do not have a moral obligation to do so. (Another Kantian idea: you can never be under a moral obligation to do something which it is not possible to do. Doctors who berate themselves for being “unethical” when their patients ultimately die should consider whether there could possibly exist a moral obligation to keep the dying alive.)

How hard should we try to imagine ourselves taking on the characteristics of the other person as we step into their shoes? Perfectly ethical people differ widely on this point. Even the Christian commandment to “love your neighbor as yourself” is ambiguous on this point. On the wards we hear many an experienced doctor exclaim, “The best I could wish for my patients is what I would want for myself.” This is of course precisely the root of the controversy when a Christian Scientist needs a blood transfusion to stay alive. Should we, like the doctor just mentioned, do unto them as we would have them do unto *us*? Or should we take the leap to the third level of universalizability and do unto them as we would have them do unto us *if we were* (actually) *they*? (Even the grammar suggests the difficulty.)

Most of the time, we operate at the second level of universalizability, the level suggested by the simple formulation of the Golden Rule (do unto

others as you would have them do unto you). The barriers to actually imagining what it would be like to be another person are enormous. I suggest that these barriers are what divide my ethics class (and divide all of us): one religious background versus another, those who have suffered a great deal versus those who have not. These differences in background—in who we are—define the limits of our ability to take the leap to the third level of universalizability and imagine that we are the other person.

It is no wonder, then, that the gender split was so dramatic in my case example. It is humbling to consider the barriers which prevent one gender from actually imagining itself as the other (the defeat of the ERA is perhaps a clearer statement on this point than all of Freud’s works put together). It now seems not at all surprising that female students voted to conceal the truth only after the pronouns were switched from “he” to “she.” The class, after all, was operating (as we all usually do) at the second level of universalizability. The switched gender broke through the barrier and enabled the female students better to imagine themselves having gone to the convention, and surely this was what made the difference in what they would have done about telling the truth under the circumstances.

One way to test this hypothesis would be to repeat the case with a female patient and a male doctor, since it presumes the issue is in the female student’s assuming the role of patient, not doctor. Another hypothesis would focus more on the gender of the doctor and the issue of women’s relatively recent entry into the physician’s world. If the female students still voted to conceal the truth with a female doctor and male patient, an entirely new hypothesis would have to be developed, perhaps relating to the use of power. As Sissela Bok notes in *Lying* (Vintage Books, 1979), if knowledge is power, then

The central challenge of contemporary medical ethics is that doctors (and others) do not recognize ethical problems when they see them.

concealing truth affects the distribution of power, increasing that of the deceiver and decreasing that of the deceived. A study of reactions to all four gender combinations of doctor and patient in male and female medical students would certainly be interesting, but begins to get away from my purposes here.

Perhaps I have generalized to the point of overstating the obvious. It is hardly a matter of controversy that who we are influences the way we solve ethical problems in medicine. My point here has been to explore *how* that influence is exerted as well as to show in some part *who I am*: a person who has been trained to think like a moral philosopher, always looking for the general principles of action underlying particular decisions. Hence my return to the particular question: Why does formal training in ethics make my clinical life, in many ways, more difficult?

A great deal is written about the well-known problem areas in medical ethics which divide even perfectly ethical doctors. These problem areas, discussed daily in the popular press, do not represent the central challenge of contemporary medical ethics. That challenge is that doctors (and others) do not recognize ethical problems when they see them.

Modern medicine is filled with covert conflicts of interest. Life is much easier (at least in the short run) if one feels only the overt conflicts. Most of my HMS classmates agreed, and still would agree, that one should be suspicious of the ethics of doctors who accept free cruises to the Caribbean from drug companies. Only a dozen or so of my classmates thought there was a problem with accepting free stethoscopes from a drug company when we were in our second year. And when I raised this issue during the very first week of medical school, as part of our "orientation" included a bag full of free books from another

drug company, everyone thought I was crazy.

Of course, issues such as those raised by gifts from drug companies do not stop with graduation from medical school. So I go through residency training with co-workers wondering whether I am crazy when I suggest that perhaps certain hidden conflicts of interest should be addressed as ethical issues. (Since I am in psychiatry, they wonder whether I am paranoid, "crazy" being too non-technical for psychiatrists.) I like to think I am trying to wake people up to the issues before us, but sometimes I wonder how I am going to sustain the energy for that throughout my career. A specific example of one of these issues might be "logical" at this point, but I have been unable to come up with one that would not break professional confidentiality; perhaps this is an example in its own right of the difficulties created by formal training in ethics.

Plato warned what perils would befall those who, having left the cave, returned to try to tell the others about the shadows. When I studied moral philosophy, I felt like I was waking up—discovering that my old ways of thinking were merely the shadows on the wall of the cave, discovering new possibilities of truth. Little did I know the difficulties that would arise when I then left the philosopher's world and entered the world of medicine.

Thus far, I have been writing about how who we are influences what we do. Fortunately, there is another side to this story. What we do, after all, influences who we are. I will not elaborate on this point here, except to conclude by noting that this feedback side of the story has been a saving grace.

The difficulty I have just described was much worse when I was a moral philosopher in a doctor's world. The process of "professionalization" refers to the feedback side: if what one does

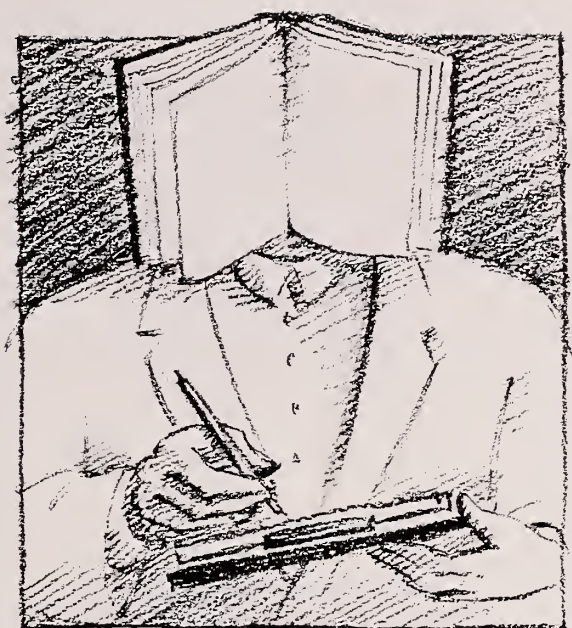
is medicine, eventually one becomes a physician. That does not mean taking on all the views of the medical establishment. But it does mean that, eventually, being a physician itself becomes part of one's background—part of the constellation of characteristics defining who we are.

As I have started consolidating my identity as a physician over the past few years, I have begun to think differently about how that part of me that is still a philosopher differs from most of my colleagues. True, I still have a philosopher's propensity to generalize issues (perhaps too quickly) to their "meta" implications. But I also have a philosopher's tolerance for unresolved and unresolvable ambiguities—a trait which has unfortunately received decreasing emphasis in the modern image of what sort of person a physician should be. Perhaps this prejudice against open-ended issues stems from modern medicine's attraction of "scientific types"—people who tend to divide the world into "hard science" and "mush" (to the considerable disadvantage of both). But modern medicine's complexities bring with them even more conflicting values to balance one against the next, so that medicine's unresolvable ambiguities are in fact currently increasing.

Even amongst my psychiatric colleagues, to whom one might hope to turn for relief from such prejudices, there exists a distinct unwillingness to expend energy on issues which contain inherently unresolved ambiguities. (Hence the peculiar isolation in psychiatry of theories of personality and character development from theories of values and religious beliefs—again to the considerable disadvantage of both.)

Indeed, my guess would be that physicians in particular who read this will think (if they are still reading at all at this point) that I have not given a very satisfactory answer to the question I set out to address. Does my formal training in ethics help me when I face ethical problems in my medical practice? Well, yes and no. □

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Classroom Ethics *on the* Job

Going the distance from school to the wards

by Perri Klass

Nobody is less welcome on a hospital ward than a medical student fresh out of pre-clinical training, confidently presenting lists of differential diagnoses, detailed pathophysiological explanations, carefully memorized regimens of treatment, all without any connection to the specific patient, the specific situation. Every once in a while, there is a place to show off your carefully memorized book-learning, but for the most part, the hope is that you will have that knowledge to build on, even to shape your thinking.

In the hospital, you have to think pragmatically; you have to tailor your thinking to the particulars of the pa-

tient, the hospital, the prejudices of your supervisors. And as many of us have found again and again in our clinical rotations, it's not all that hard to compensate for major gaps in our basic "fund of knowledge" (as those in power like to call it, suggesting a limitless endowment kept always on the increase with contributions from generous alumni). If you know how to play the game on the wards, ignorance is no obstacle to getting things done; certainly you can do your rotations and get good evaluations, give sharp answers on rounds, make a good impression—probably you can even take excellent care of your patients.

The teaching of ethics, of course,

should work differently. It ought to be possible to use the luxury of time and relative leisure during the pre-clinical years to discuss ethical problems. It ought to be possible to give students an ethical structure—or, more properly, help them define the ethical structure in which they believe and which will serve them well in the hospital.

It is an emendation to your pathophysiology course when you discover that it is not appropriate to do all invasive procedures on every patient; you memorized the procedures as logical investigative steps, and then in the hospital you learn that for some patients the procedure may be worse than the disease, that many diagnos-

In pathophysiology courses, ethical dilemmas—like the problems of scheduling the tests you need—are left for clinical teaching. You'll learn it on the wards.

tic procedures give you evidence on which you cannot act. A disease of tremendous scientific interest, if incurable, may mean a patient not to be investigated too rigorously, who must be allowed to die with some body parts intact, safe from such investigation. That should, in itself, be discussed in an ethics course.

But the teaching (or at least the learning) of medical ethics often parallels exactly the teaching of medicine. You may discuss theory in the pre-clinical years, you may even work on specific applications to your hospital training, but once you actually get into the hospital, everything you have done already takes a back seat to considerations of time and pressure, the prejudices of your teachers, and the rhythms of hospital life.

Before clinical training begins, the topic of medical ethics tends to show up in two situations. The first is the course devoted to medical ethics, where there is leisure to consider and discuss and arrive at conclusions about your own beliefs. The second is in the occasional "clinic," where a doctor presenting a patient in an amphitheatre full of medical students may mention in passing some ethical consideration which figured in the case. This mention takes various guises—such as the surgeon who concluded a long saga of operation after operation on one unfortunate man by calculating the cost of all his medical treatment, comparing it to the cost of a missile (it was less, though within the same ballpark), and asserting that we could judge for ourselves which was the more worthwhile expenditure. Or the geneticist trying delicately to discuss issues of genetic counseling and prenatal diagnosis while seven or eight members of a family afflicted by sickle cell sit ranged at the front of the amphitheatre, their family tree sketched behind them on

the blackboard with darkened squares and circles denoting dead children.

Medical ethics are generally not discussed in the pathophysiology courses in which we learn each and every individual disease—memorizing pathological process, clinical presentation (all written descriptions of all clinical presentations of all diseases are similar; if you list every possible presenting symptom, eventually they all overlap), treatment, complications, prognosis, risk factors, and so on. "Ethical dilemmas" is not one of the subheadings (nor should it be, though it's entertaining to imagine the lists people would come up with), and ethics are not part of the discussion. That may be in part because not all the teachers are clinicians, and in part because the classroom seems so removed from the hospital; ethical dilemmas, like the problems of scheduling the tests you need, like the logistics of hospitalization, are left for clinical teaching. You'll learn it on the wards.

Occasionally during a clinical rotation there is time for the medical student, the residents, and attending physicians to talk in detail about some issue of medical ethics. I remember a long argument one morning on rounds about the issue of sending an infant home on a monitor after an episode of what might have been near-SIDS. What does it mean to say it might have been near-SIDS? It's the vaguest possible statement; the child *might* have briefly stopped breathing in the middle of the night (by the time her

mother got her out into a lighted room, shaking her, she was breathing again), and if she did stop breathing it *might* have been near-SIDS. But Sudden Infant Death Syndrome is a diagnosis of exclusion; if the autopsy shows a cause of death, the child didn't die of SIDS—by definition.

So here you have this possible near-SIDS, and do you send the child home on a monitor? The evidence that monitors actually save lives is confusing. There is also some evidence that so-called "monitor pathology" occurs in families when a child is on a monitor, making it difficult for the parents to have a normal relationship with their child or with each other, and ultimately making it hard to decide when the monitoring can be discontinued. And here you have this uncertain episode. But you know that it is true that one episode of true apnea increases the chance that there may be other episodes. And it *feels* like a monitor should help, should make it possible for the parents to cope better with the threat of crib death.

My attending, an expert on SIDS, led us through a long and complex discussion of this decision. One of the interns felt that without better evidence that monitors help, you don't put this child on the monitor, you don't risk damaging the whole family with monitor pathology. You reassure the parents and send them home. The attending wondered how much of this willingness to reassure had to do with the vagueness of the mother's story, and made it clear he was inclined to credit it, however vague; if a parent felt something strange had happened, he thought it had probably happened.

We questioned the decision from various angles: Are we playing God if we refuse the monitor or if we prescribe it? How long would you let people keep a monitor? What would you want if it was *your* child? And finally we discussed the difficulty of

Most of us presumably started out believing that our job was to minimize pain and suffering. This ideal diametrically opposes the most basic elements of clinical training.

delivering the prognosis: how can you walk up to parents and say, 'your child may indeed now be at increased risk of sudden death from factors we cannot explain, death we are essentially unable to prevent.'

Much easier, we had to acknowledge, to offer either reassurance or else a device to ward off death. Having talked it through, we were left looking at the decision to prescribe a monitor in a slightly different way: 'You are in a difficult situation,' we were saying to the parents. 'We would like to help, but realistically, we don't know if there is anything we can do. We can offer a device which may make you more comfortable with your child, but may also disturb your family, and we can offer it only in the hope that in your particular case, as distinct from mass statistics, it may work.'

Now, this is actually a common rationale for prescribing treatments. But I have rarely seen it articulated, let alone discussed, faced, acknowledged. And this case was an exception in many ways: an exceptional attending, a hospital team with patience and interest for the discussion, a reasonably stable ward population, time in rounds devoted to such a topic.

Often during a clinical rotation, the medical student will hear a resident or attending pontificate briefly about some ethical issue, giving the beginners the benefit of his (I use the pronoun advisedly) great experience in much the same manner he would lay down the law on the treatment of acute asthma. "This patient is trying to die and should be allowed to die." "These people do it to themselves; we shouldn't have to keep them alive whenever they decide to go on a drunk." "This child should never have been born; they should have detected the anomaly and terminated the pregnancy."

At such moments, it is the medi-

cal student's job to nod, conveying the impact of a piece of wisdom received. If your disagreement is so violent, or your principles so strong (highly unusual in the medical student) that you cannot bring yourself to nod, you are permitted to shrug, but this often provokes an extended elaboration on the point, which you may well not really want to hear.

Medical students learn ethics in the hospital essentially by example. We quickly learn that ethical issues, even the big headlines (Turning Off A Respirator, Allowing a Malformed Baby to Die, Experimenting on Human Beings), are fairly standard, fairly everyday decisions, at least in a major teaching hospital. The occasional case which does make it into the newspaper is usually either an extreme example or a situation in which, for one reason or another, the patients' relatives are dissatisfied with the hospital's actions.

During my one-month rotation at one Harvard teaching hospital, one of my patients was taken off the respirator and allowed to die. In a three-month rotation at another Harvard teaching hospital, I had patients who were not investigated for fevers because it was felt that it would be futile to treat them—and also patients who underwent investigative procedures "for teaching purposes."

There is in the hospital, I think, a definite sense of an ethical structure, even if no one can exactly describe it. Many values taken for granted in a community of doctors affect ethical

decisions in subtle ways rarely discussed. The importance of mental ability, for example, is a given to many doctors. I took care of a 10-year-old child with a brain permanently locked in early infancy as a result of a severe neonatal infection. His parents devoted themselves to his care, helping him along to every tiny triumph within his reach. They wanted every possible medical advantage for him as well; they wanted him treated as a person of value.

The nurses, like all pediatric nurses, responded to the strength of parental affection, and didn't complain about the extra work involved in caring for the child. The doctors were not unsympathetic; in fact, since the case represented for most of them the most devastating catastrophe they could imagine befalling a child, they were hushed and respectful, acknowledging tragedy. But their reaction to the family's insistence on operations and new treatments for seizures was that there was "pathology" in the family; the parents were behaving unreasonably.

Another example of the unspoken code of values among doctors is the lack of importance given to religion. One would think that people who regularly deal with the dying would give serious consideration to what may comfort even the terminally ill. But when it came to arranging for chaplains, or wheeling patients down to religious services—it isn't just that doctors didn't do these things; they didn't even want to hear about them. You might scrupulously make sure that every possible lab test was done on a dying man, but you would never concern yourself with getting the priest up to hear his confession.

As we progress through our training, we do learn a certain set of ethical perspectives. This code may have little relationship to our own personal codes; there are doctors who are deeply religious, for example, who

*Once you actually get
into the hospital,
everything you have
done already often
takes a back seat to
time and pressure, the
prejudices of your
teachers, and the
rhythms of hospital life.*

still, somehow, manage to behave just like all the other doctors in the hospital.

When a specific moral issue emerges, everyone tends to feel a little uncomfortable, especially if that issue may actually elicit differences of opinion among doctors. In our ob-gyn clerkship, someone remarked that it was illegal to require anyone to watch abortions. There seemed to me to be an immediate and palpable sense that in our little group of medical students there were probably a couple of people who actually thought abortion was murder, and there we all were sitting around a table, and how about that? We didn't discuss the morality of abortion, of course, or in any other way risk bringing up possible disagreements.

We learn the unspoken ethical imperatives. We see the frequent examples, the everyday situations in which they are put into practice. I imagine that by now almost all my classmates have seen:

- A mistake by medical people which resulted in death or injury for a patient. We know how doctors and hospitals deal with such mistakes (at least when they can, when the law doesn't take it out of their hands); there are various ways. "He would have died anyway," I have heard several times; some action was taken which in retrospect was clearly wrong, but which merely hastened the inevitable ("We will *all* die anyway," my attending once retorted).

- Unnecessary pain inflicted on patients. Most of us presumably started out believing that patients should not suffer extra pain on our accounts, that our job was to minimize pain and suffering. This ideal diametrically opposes the most basic elements of clinical training, and if you tried to take it as your guide, you would not do anything to any patient,

since there is always a more experienced person who could do it more quickly, more easily, get it on the first try. This ideal is completely unrealistic, but I think its initial abrogation is at the roots of some of the ethical modifications which come next.

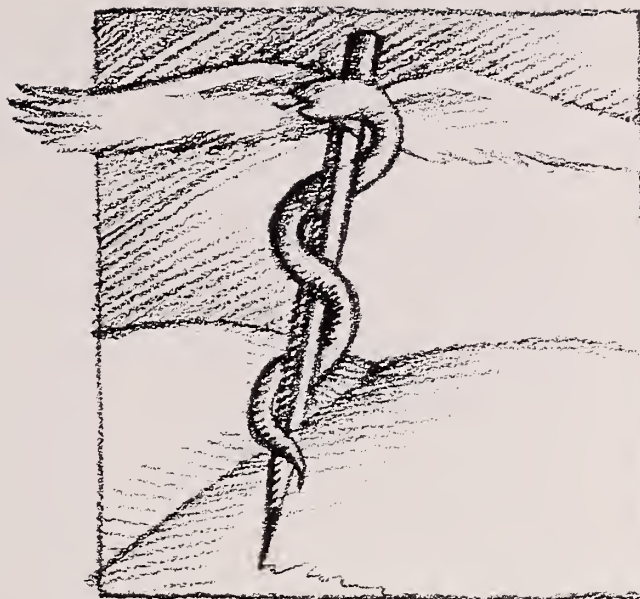
We come to understand that our education is sometimes accomplished at the patient's expense, that we are therefore entitled to cause pain, and that we are judged not by the patient, but by other doctors. The medical student is pushed further and further toward the doctor's perspective, toward identification with doctor and not patient. I realized during my third year that if I told one of my stories-of-my-own-ineptitude to medical students, a story for example of sticking a needle again and again into a patient apparently without veins while a hostile resident stood by watching me, that other medical students would laugh in sympathy with me. Tell it to non-medical people, and they all identify immediately with the helpless patient in the bed; they imagine themselves sick and miserable, while an incompetent doctor sticks the needle in again and again. They don't think it's funny.

So my perspective has changed, in a distinct way—not that I laugh at pain out of total callousness; my laughter is mostly defense against a fear of my own incompetence, the pain of causing pain. Still, what I find interesting is that my responses have changed, my ear for humor is different, and I identify with the doctors, not the patients.

- A patient whose illness was not treated aggressively, without consultation with the patient or the family. I followed a patient, elderly and very sick, no hope of a cure, whose husband refused to admit that she was not coming home to him. He allowed her orders to be made "do not resuscitate," but only because he was assured that everything short of a code would be done to keep her alive. She got a fever and we didn't get a chest X ray. Then the resident decided there should be a chest X ray in the record, so we got one, and sure enough it showed pneumonia. But we didn't start her on antibiotics. And so on. None of the people treating this woman was uncomfortable with the idea of holding back aggressive treatment (letting her die of pneumonia, that is, though it wasn't said that way), but some were uncomfortable dealing with her husband, who was always full of questions about her condition.

As medical students see these dilemmas, again and again, they learn how they will behave in such situations. Either you have sworn a solemn oath never to do what you saw done, or else you carry with you what you saw as a template; in such and such a situation, you do thus and so. I think the second reaction is far more common; that is, after all, how you treat the other information you acquire during your clinical rotations. □

Perri Klass '86 is an intern in pediatrics at Children's Hospital. She is the author of I Am Having an Adventure, a book of short stories, and Recombinations, a novel. She writes a monthly column in Discover Magazine, and a bimonthly column in Massachusetts Medicine. She is now working on a collection of her pieces about medical school. Some facts in this piece have been changed to protect confidentiality.



On Designing Courses in Bioethics

Two members of the Department of Social Medicine and Health Policy discuss the shaping of a curriculum

by Allan Brandt and Lynn Peterson

As recently as 20 years ago, formal courses at Harvard Medical School in medical ethics and social medicine did not exist. Students and young physicians learned ethics by watching clinicians practice their art. They listened to stories about the care of malformed neonates, the adverse effects of telling patients "bad news," and the absolute importance of privacy or confidentiality. The writings of Oliver Wendell Holmes, William Osler, and Harvey Cushing introduced students in their spare time to medical tradition and revealed the ways in which physicians had previously faced and resolved the perennial dilemmas of medical care.

Abundant and major technical achievements have changed the delivery of medical care. Organ transplantation, joint replacement, and extra-corporeal circulation are daily events. Broad-spectrum antibiotics, H₂ blocking agents, and lithium are commonly prescribed. Computerized scanning, endoscopy, and interventional radiology are readily available. In addition, such social and institutional changes as health maintenance organizations (HMOs), government involvement in medical care funding, and diagnostic related groups (DRGs) have had a dramatic impact on medical practice—and are likely to be even more extensive in the future.

We now also have more informa-

tion about patients' attitudes, the doctor-patient relationship, and the physician's role and responsibility. Social scientists, economists, historians, anthropologists, and philosophers have given us a more complete and graphic account of health-care delivery. Psychologists, social workers, dietitians, and a variety of paramedical professionals play an increasing role in that delivery. Patients—who may be seen by 10 or 15 professionals in the hospital setting—now often perceive their doctors as part of a health-care team. This system raises the question of how to appropriately organize and delegate responsibility—a question that has moral and ethical components. Most medical schools

now provide some formal teaching in social medicine and ethics that helps address this question.

Harvard Medical School's Department of Social Medicine and Health Policy has responded to these concerns since its inception in 1980 by offering diverse courses in biomedical ethics. Students learn ways of dealing with the most vexing issues medicine poses. For the pre-clinical student, the department offers electives including Moral Philosophy and Medicine, the History of Ethical Dilemmas, Cultural Issues in Health Care, Literature and Medicine, and an introductory social medicine course which centers on value conflicts in both clinical and political arenas. HMS students are required to take at least one of these offerings.

In the clinical years, the department conducts biweekly seminars on value and ethical issues in clinical medicine for students doing their core clerkship in medicine at Brigham & Women's Hospital. This setting gives students the opportunity to discuss the difficult issues raised by patients they work up and see in the hospital. Plans are currently underway to expand this aspect of the curriculum.

For students in the New Pathway, there are considerable opportunities to study medical ethics as well. Early on in the planning of the New Pathway, the designers decided that ethical problems should be addressed consistently as they arise rather than in a separate block. The premise behind this decision was an acknowledgment that ethics is not a separate field, but rather must be a daily concern of those responsible for patient care. As part of the "Doctor-Patient" curriculum, which runs throughout the four years of the New Pathway, students will be constantly challenged to evaluate the difficult value conflicts which arise in patient care. The flexibility of the New Pathway presents an excellent opportunity to see that teaching about ethics is fully integrated into medical education.

General Approach

Traditionally physicians have sought to deliver humane and responsive care. But knowing the meaning of "humane and responsive" requires understanding the broad socio-cultural domain which receives and interprets medical activities. In recent years, the Department of Social Medicine and Health Policy has worked to develop a coherent theoretical approach to courses in medical ethics, creating

Students learn that medical ethics is an area which requires rigorous learning and competence, like other subjects taught in medical school.

a curriculum which helps students develop techniques for analyzing ethical dilemmas in a complex socio-cultural context. The curriculum emphasizes that the broader world has a powerful influence on health, disease, health-seeking behavior, illness behavior, and physician behavior—and assumes that the physician's ability to understand him or herself and the patient in this broader context is fundamental to quality health care.

This general orientation leads us to draw on the knowledge, skills, and powerful analytic tools of the social sciences and humanities. Students are introduced to the basic concepts and methods in anthropology, sociology, economics, history, and philosophy—disciplines that elucidate causal, determinant features of medical care delivery and evaluation. Indeed, these courses are conducted like graduate seminars in the arts and sciences. Readings are generally extensive and drawn from a number of disciplines. They might include books as diverse as socialist Charles Bosk's *Forgive and Remember*, a story of error and surgical training, or John Berger's *A Fortunate Man*, the poignant story of a British country doctor. Through such readings, students become aware of the major body of literature social scientists and humanists have produced, literature which demonstrates the depth and demanding nature of this area of inquiry. They learn that medical ethics is not simply the expression of personal opinions about what is right. It is an area which requires rigorous learning and competence, like other subjects taught in

medical school. Their analytic skills are evaluated on the basis of research papers, oral presentations, and examinations.

A different approach to teaching medical ethics has been espoused, pioneered, and developed by professional moral ethicists and philosophers such as Robert Veatch, Tom Beauchamp, and James Childress. Their method relies primarily on studying and elucidating the meaning of moral principles and concepts, and then applying them to the medical-care context. This method emphasizes moral theories, especially those expressed in the writings of Western philosophers such as Hume, Kant, Bentham, Mill, and Rawls. Its basic premise is that a firm, working grasp of universal principles allows clear insight into what to do. Once the meanings of sympathy, rational autonomy, preference satisfaction, and justice are appreciated, we can easily resolve the practical dilemmas in medical care.

While not denying the validity of the moral precepts, we believe this approach has two major defects. First, it assumes that medicine as a profession and institution is value-neutral. Medicine has no importance by itself; its value is only secondary. It is a service, and derives its value from its "products," such as health, relief of suffering, and extending life.

This assumption may ultimately be true, but it overlooks a variety of immediate motives or reasons that patients, physicians, nurses, and the community give for their actions. Patients trust, seek advice from, and confide in doctors because they are doctors. Physicians recognize an obligation to medical students, residents, and their colleagues because of their connection with medicine—not necessarily because the connection will have a direct impact on health or better medical care. This obligation leads to certain practical rules or imperatives which have immediate impact on what physicians do. We want to explore these more immediate motives and values, see how they are expressed in the daily activities of medical care, and find out how they fit into the calculus about what is "best" to do.

A second, corollary assumption of the philosophical approach to teaching medical ethics is that the historical tradition of medicine is rather unimportant. It is unlikely that we can find out what is best to do by examining the past. Indeed, the past

does not give clear direction, but it does reveal patterns and trends which shape and reflect values and behavior. We want the students to appreciate such questions as why doctors have had trouble abandoning outmoded therapies and why patients find effective, simple remedies unacceptable and other complex, risky treatments worthwhile. The details of past physician and patient behavior give many illustrations of these phenomena.

The philosophical approach has many advantages. It helps clarify fundamental issues such as rights, interests, and needs. It points to the *prima facie* principles that underlie all rational thinking and decisions. It has the appeal of deriving decisions and resolving quandaries by virtue of self-evident, inalienable principles. A prescription based on a categorical, absolute principle and a true observation or diagnosis is supposedly unexceptionable.

While this view has merits, it also has difficulties. For instance, people can usually agree to certain principles, such as those expressed in the Ten Commandments, Kant's categorical imperative, or the Golden Rule—or the more specific medical principles of beneficence and autonomy. However, it is not always clear what to do in cases where more than one of these principles apply. Common examples in medicine include cancer that produces depression or anxiety, or a patient's autonomous choice to refuse standard, life-saving therapy like blood-transfusions or amputation of a gangrenous extremity. These are "hard" cases. It is confusing to try to derive a clear direction on the basis of the principles, despite their validity.

Beauchamp and Childress, whose *Principles of Biomedical Ethics* is based on this approach, comment:

The observation that even the most adequate moral systems are substantially incomplete may seem odd. . . . [T]his incompleteness may reflect more the complexity and even the tragedy of the moral life than any failure of the theories. It is quite possible that the moral life is so diverse that no theory can stand up to the completeness test even though a theory may capture some specific domain of that life. . . .

Our program differs from the philosophical approach by emphasizing the context—the personal, social, and cultural environment in which health care takes place. We think that when principles are emphasized at the ex-

pense of an adequate account of personal and social experience, there is a tendency in the teaching of ethics to produce an overly moralistic tone. Physicians with such an attitude could become overly confident, supercilious, and unapproachable. Skepticism is replaced with certainty. We believe this approach misrepresents the inherent uncertainty of clinical practice.

Our attempt is to recreate a complex clinical and social context, utilizing the social sciences mentioned in the general approach outlined above. This approach shies away from simple, clear, and sharp answers. While the irreducible multitude of alternatives it reveals may have a paralyzing effect, such an approach can lead to greater satisfaction by pointing to the importance of communication, reciprocity, negotiation, and tolerance. It promotes a better and more comprehensive understanding of the patient's expectations and how and when they can be met.

Pre-Clinical Teaching

Pre-clinical courses, such as those in the history of medical ethics and the departmental introductory course, are designed to help the student develop a conceptual structure or framework upon which to add subsequent experience and information. Ethical or value terms such as rights, needs, duty, obligation, and responsibility are presented and analyzed in the medical context. Also, we examine medical concepts like illness, suffering, and harm, as well as such activities as making a diagnosis and prescribing a treatment. We ask, for

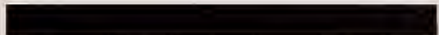
example, what it means to call a patient "non-compliant" or "difficult." How do these labels affect subsequent care?

Seemingly pure medical tasks entail ethical and value assumptions. Making a diagnosis of Hodgkins Disease, for example, seems like a straightforward medical endeavor. But questions about the quality and strength of the evidence, what and when to tell the patient and his or her family, recommendations for therapy, and the extent of counseling or supportive care all involve ethical premises concerning what is right, good, or appropriate to do.

In most courses, historical cases are analyzed in detail in order to show how social and cultural values influence medical practice. A historical perspective has the advantage of revealing patterns and major transitions, determined in part by social norms and cultural values, in health-care delivery. Students focus on the major changes in the doctor-patient relationship over the last century and their meaning. Topics for discussion have included the history of experimentation with human subjects, the history of malpractice litigation, and the history of biomedical education. Students might decide to write papers on diverse topics such as changing medical attitudes about death and dying or the medicalization of alcoholism.

The reasons for historical change reveal how medical practice depends upon economic, political, and cultural forces as well as scientific advancement. Questions like: "Why was bloodletting practiced long after it was believed by many to be ineffective?" or "Why does control of venereal disease require more than a pill or antibiotic?" can be answered only with an understanding of the broad sociocultural domain. Adherents of bloodletting had political power and interests. It took their adversaries many years to overcome this influence and halt the devastating effects of "therapeutic" phlebotomy. Venereal diseases incur blame and guilt, promote secrecy and denial, and therefore do not receive proper medical attention. Before these diseases can be controlled, social attitudes must change.

Another major issue concerns the allocation of resources, not just on the macro scale but within the smaller economies of the hospital and clinic. What is the significance of the fact that in 1900, 10 percent of all Ameri-



*Biweekly seminars
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in the hospital.*

cans died in hospitals while today 90 percent do? The hospital environment and its transformation in the 20th century has had a profound impact on the doctor-patient relationship.

In a number of courses, teachers have found it helpful to have patients and their families participate in discussions. Patients present vivid details of their experience with illness and decision making, and family members add their observations. Articulate patients can give gripping accounts which are more readily understood by students than if the cases were discussed as thumbnail sketches or presented from the perspective of an outside spectator. Students ask astute and revealing questions; they are intensely curious about why certain alternatives are more acceptable than others.

One patient, for instance, gave an especially startling account of decision making under uncertainty. This patient had fulminant, refractory colitis which seriously jeopardized her life. She vividly recalled her relent-

less rectal bleeding, intractable tenesmus, fatigue, and mental confusion. Despite these enormous physical and mental handicaps, and their attendant emotional impact, she maintained an unflagging interest in making her own decisions about the need for colectomy. Her family provided support but she made the decision. She distinctly recalled the importance and value of adding a specific request to the consent form.

Another patient with a similar acute illness displayed a completely different attitude. She asked, "How could I know what was best to do?" The patient wanted doctors to make the choice. She found information confusing, disturbing, and frustrating. Despite her intelligence and competence and the need to decide, she felt unable to do so.

The contrast between these two patients shows the need for different applications of the same moral and rational principles. Attempting to edit information for the first patient induces suspicion, distrust, and anger.

But for the second patient, uninterpreted, candid discussion is frightening, anxiety provoking, and clearly undesirable. Respecting each individual's right to decide and doing what is in their best interest in both cases require different strategies. It would seem wrong for the physician to not urge the first patient to have the colectomy essential for life, and at the same time wrong to simply dictate to the second patient what must be done without helping her comprehend the situation and express her wishes.

Informed consent is a specific doctrine in medical care which raises these issues and requires careful analysis in each situation. Clearly, there is a consensus that informed consent is valuable but, as all doctors and patients know, in practice it is difficult to achieve. By asking "What are the forces which encourage (or discourage) effective communication?" one can appreciate the influence on discourse of ethnicity, class, and the nature of the illness. On a practical level, one seeks to discover techniques

Ethics: The First Formal Courses

In 1967, Dean Robert H. Ebert titled his valediction "The Ethic of Medicine." At the time he spoke, HMS offered no formal course in medical ethics—although ethics courses were and had been available to HMS students elsewhere within the university. Back in 1919, for example, Richard C. Cabot left the HMS faculty to join the university's Department of Social Ethics. He discussed medical ethics along with other ethical problems in his courses at Harvard College.

In the late 1960s and early 1970s, change came fast at HMS. In 1969, Ebert appointed HMS's first instructor in medical history and new director of the three-year-old Program in the History of Medicine. The appointee, Stanley Joel Reiser, M.D., a doctoral candidate in Harvard's History of Science Department, had a strong interest in medical ethics. Reiser thought it critical, he recently told the *Bulletin*, "for medical students to explore the ethical issues of medicine systematically and formally."

Both Ebert and Robert Blacklow, then instructor in medicine and assis-

tant to the dean of the Faculty of Medicine for curriculum, strongly supported the idea.

In the fall of 1970, William Curran, Frances Lee Professor of Legal Medicine at HMS and HSPH, who had been teaching HMS's legal medicine course since 1968-69; Arthur Dyck, Saltonstall Professor of Population Ethics at the School of Public Health and the Divinity School; and Reiser instituted a new course, *The Physician in Society: Historical, Legal and Ethical Perspectives*. Given through the Department of Preventive and Social Medicine, the course examined "some of the key moral and legal issues in the practice of medicine and the responsibility of physicians in modern society," according to the catalog, including "human experimentation, the maintenance of life, the doctrine of privileged communication, the rights of patients, and the eugenics and genetic manipulation movements."

The course proved popular, recalls Reiser, who is now at the University of Texas Health Science Center in Houston. "In the late 1960s and

early '70s people looked closely at the values of society, from civil rights to government intervention in war. It was not aberrant to examine the ethics of health care. It fit in."

In 1971 HMS received a grant from the Joseph P. Kennedy Jr. Foundation for an interfaculty program in medical ethics involving faculty from the schools of Medicine, Public Health, Divinity, and Arts and Sciences. Co-directed by Curran, Dyck, and Reiser, and administered through HMS, the program supported development of more courses—which were open to all students in the university—and funded four to five fellowships a year for pre- and post-doctoral students to study medical ethics. (Many former fellows have gone on to teach medical ethics at other universities. "We're victims of our own success," comments Dyck.)

From 1971 to 1984, Melvin Levine '66, then associate professor of pediatrics and chief of the Division of Ambulatory Pediatrics at Children's Hospital, led ethics rounds for staff physicians, residents, nurses, social workers, and Kennedy fellows at the

to enhance communication so that consent can be truly informed.

The students witness and participate in obtaining patients' informed consent. They see the actual transaction and ask questions of doctors and patients. Teachers ask what the consent means to patients, how valuable or important it is, and whether they felt completely or adequately informed. The response to this question varies. It seems in general that the actual document or procedure of signing has little impact or special meaning.

Clinical Teaching

During the core medical clerkship at Brigham & Women's Hospital for third-year students, we hold a series of seminars dealing with ethical and value issues. These seminars, held every other week, are attended by two members of the Department of Social Medicine and a group of five to 15 students. The topics are Informed Consent, The Difficult Patient, Managing Medical Failure, Managing the

The New Pathway presents an excellent opportunity to see that ethics is fully integrated into medical education.

Terminally Ill, Value Issues and Decision Analysis, and When Doctors Disagree. Students are encouraged to describe manifestation of these issues

in their own experiences and patient encounters. Additional examples are presented and discussed in detail. A group of readings is distributed for the students' reference.

The purpose of these seminars is not to provide definite, clear answers, for there really are none, but rather to understand the reasons for differing points of view and why some arguments are better or more important than others. Why is the contentious patient perceived as "difficult?" How should we handle physician disagreement? What should a medical student do if he or she believes that something is wrong? What is the "right" thing to do when there has been a mistake?

Exploring questions like these with the students makes them draw on experiences both within and outside medicine. When they give reasons for a certain point of view they discover hidden assumptions concerning their own personal values as well as the goals of medicine, how sympathy is expressed, and how patients' rights

hospital. Every other week he, Curran, and other members of the Kennedy Interfaculty Program invited a member of the hospital staff or administration to present a case that raised ethical issues. Participants discussed the case for their own instruction (rather than to make a decision).

"In 13 years, there was amazingly little repetition," recalls Levine, who is now professor of pediatrics at University of North Carolina at Chapel Hill and director of the Clinical Center for the Study of Development and Learning. "We just kept coming across issues."

In 1975-76, courses in history of medicine and medical ethics were listed under the new heading medical humanities. That year, graduation requirements were changed for the Class of 1978 and subsequent classes. For the first time, HMS required students to complete four credits (the equivalent of one longitudinal, semester-long course) in the behavioral, social, and humanistic sciences.

Through their teaching, Curran, Reiser, and Dyck developed a collection of over 100 articles and primary

documents, including ethical codes through the centuries, court decisions, government documents, and guidelines. In 1977, they co-edited the collection as a book, titled *Ethics in Medicine: Historical Perspectives and Contemporary Concerns*. It contains works from philosophy, religious ethics, history, political science, sociology, economics, law, medicine, and biology.

By 1981-82, 11 courses were taught under the umbrella of medical humanities, including history of medicine, medicine and law, medical legislation, literature and medicine, "plain doctoring," and ethics in medicine. In addition, the Department of Social Medicine and Health Policy (split off from the old Department of Preventive and Social Medicine in 1980) offered a new course, titled Moral Philosophy and Medicine. That course, started by Edward Hundert '84 as a second-year student (see his piece in this issue), was offered in 1985-86 for the last time.

Since 1982, medical humanities courses have been taught through the Department of Social Medicine and

Health Policy. Medical historian Allan Brandt and surgeon Lynn Peterson have been developing ethics courses in the department (see accompanying article).

Today members of the classes of 1984 through 1988 must take six credits in two of the three areas of behavioral science, social medicine (including medical ethics), and preventive medicine. The Class of 1989 and subsequent classes, including New Pathway students, must earn a total of 10 credits in social, behavioral, and quantitative science, with at least two credits in each category. (The quantitative requirement may be met by passing a biostatistics competency exam.)

Among the courses this past academic year that could be used to satisfy the requirements were three that dealt specifically with medical ethics: Allan Brandt's Medical Ethics in Historical Perspective, Lynn Peterson's Moral Aspects of Dilemmas in Medical Practice, and Ed Hundert's Moral Philosophy and Medicine.

—Lisa Derman

are protected. A common recurring theme in these seminars is the need for physicians to spend time talking to their patients, finding out what the patients believe and want. Students appreciate how difficult this task can be for busy physicians, yet satisfactory approaches to these ethical and value issues require rapport and communication.

Students find these sessions helpful because they deal with topics not covered in their regular teaching. The subjects are also very provocative and provide the opportunity for heated, stimulating discussions. They uncover conflicts which might not have been otherwise appreciated. These seminars create a forum in which students can freely express their views and learn from one another.

What do we expect students to get out of these courses? First, as explained above, we don't think students should become moral experts. Doctors are responsible for making good medical judgments and—as medicine involves rational agents, special human relationships, the welfare of others, values, and is intimately connected with events surrounding life and death—these judgments depend on moral grounds or reasons in every case. But at the same time there is no such thing as a moral expert.

Second, studying ethics and values from the view of the social and behavioral sciences is parallel to studying anatomy, biochemistry, or physiology. Understanding the anatomy of the lungs and tracheo-bronchial tree and the biochemistry of coagulation and tissue injury, and knowing something about cardiovascular and respiratory physiology, requires more than just knowing a list, classification, and incidence of diseases which produce hemoptysis. Such knowledge requires knowing an answer to questions like “why” those diseases produce hemoptysis. The second layer of knowledge becomes essential in analysis of new cases or unusual presentations of common cases. Basic, fundamental knowledge allows analysis in terms of basic pathophysiology rather than just fitting symptoms into a particular taxonomy. We hope to do the same in teaching bioethics by providing the concepts helpful in analyzing such problems as competence, refusal of treatment, consent, confidentiality, and withholding information. The law, professional codes, institutional rules, and acceptable, polite behavior all provide clues, but they don't give clear indications in

*What does it mean
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the difficult, complex cases. One needs help from a deeper, conceptual level to analyze these issues, the way basic science aids in the analysis of a problem like hemoptysis.

Medical practice is necessarily involved with conflicting interests and demands. Patients don't want to be sick. Illness always interferes with other projects or goals. Ethics points to ways of reaching agreement, of achieving a consensus or resolving conflicts. While we do not believe that bioethics should be regarded simply as a technique for problem-solving, these studies point out how problems have been solved previously and can be usefully analyzed in the future. Certain alternatives are less objectionable than others. Reciprocity, mutuality, and negotiation are helpful notions or tools.

Medicine as a practice needs an effective critical apparatus. Tissue committees, peer review committees, and licensing boards have been created to survey practitioners and their work. This criticism needs continual revision as practices change, new methods appear, and previously acceptable standards become outmoded. The current scrutiny of diagnostic-related groups, physician behavior in laboratory test ordering, and utilization of expensive, invasive diagnostic procedures all entail ethical implications and assumptions. Bioethics should make these critical reviews more closely connected to the human values concerned and not dependent on simple financial constraints.

Pure technical knowledge and biological theory are necessary for good medicine, but they are an incomplete basis for medical care judgments. The social and personal dimensions, while not exclusively within the domain of medical expertise, are essential. Physicians therefore need to be aware and comfortable in their practical application.

Summary

Learning how to provide good medical care is a lifelong project. One aspect of that effort requires an adequate and evolving fund of scientific knowledge, familiarity with diagnostic measures, and awareness of effective therapies. Another part of the endeavor requires understanding human attitudes, values, intentions, and motives. Humane and responsive care cannot be divorced from these human qualities. Before entering medical school, undergraduates take courses in the humanities and behavioral sciences. These courses are thought to be important for individuals planning to become physicians. We agree and hope to provide a series of graduate-level courses, seminars, and discussion groups which will continue the undergraduate learning into the medical curriculum.

Most important, we hope to orient and tightly integrate the exposure to the humanities and behavioral sciences with the actual conflicts and challenges of health care delivery. We want to review what the students learned as undergraduates, expand some of their background knowledge, and orient it to the specific experiences of patients, doctors, and social concerns about medicine. Some students may pursue research projects and specialize in areas of ethics and value analysis. But we hope all students will find these studies rewarding and that the courses provide students some continuity with their undergraduate education and their basic motivation to become physicians—and ultimately make their future careers interesting and fulfilling. □

Lynn Peterson is HMS assistant professor of medical ethics and assistant professor of surgery at Brigham & Women's Hospital and Beth Israel Hospital. Allan Brandt, Ph.D., is assistant professor of the history of medicine and the author of No Magic Bullet: A Social History of Venereal Disease in the United States Since 1880.



MY FIRST DEATH

A lesson in emotional etiquette

by George Papanek

George Papanek '59 wrote the following account of his first experience with death 12 years ago, 16 years after the events it relates. He finds the experience described here, he recently told the Bulletin, "a telling demonstration that tough 'grown-ups' become emotionally involved too. We're all on the same journey. As doctors, we are privileged sometimes to ease the path of our fellow travelers."

The experience, Papanek added, taught him "that it's possible to combine caring and competence—and how important it is for colleagues to work together not only on the application of knowledge to the clinical task but also to permit a shared expression of feelings."

Papanek is HMS lecturer in psychiatry, clinical professor of psychiatry at Boston University Medical School, and medical director of Fresh Pond Mental Health Clinic in Cambridge.

In my third year of medical school, I was assigned to the medical service at Peter Bent Brigham Hospital. Students were called "doctor," and given a lot of responsibility. Although we reported to teachers who took ultimate responsibility, to our patients and their families, we represented the hospital.

A few days after I had moved from one ward to another, an old woman who had suffered a massive heart attack was brought to the hospital in an

ambulance. She was a private patient of one of our professors, a man I admired, at another teaching hospital. She was so sick that it was better for her not to be moved. According to our random assignment schedule, she would be my patient if she stayed at our hospital. The chief resident checked me out with my former ward chief, and decided she could stay. So there she was, special for me from the first.

She was the head, undisputed, of

a large, well-to-do family. Her granddaughter was then keeping company with one of my classmates and close friends, so “doctor” or no, my student status was clear to the family. There were no coronary units then, so we put my lady into a private room, kept her mind quiet, her bowels open, and her pain down, and I monitored her condition.

At first, I was more worried about making a mistake than anything else. When she didn’t die in the first dangerous 48 hours, I was grateful to her. As she became more comfortable and alert, we got to know each other. She was pleasant and calm and had a capacity for ironic wit. I became fond of her. I became familiar with the family too, except for the estranged husband, who didn’t show. The oldest daughter became the spokeswoman. She visited her mother every day and asked direct and intelligent questions. I came to like her too.

Recovery went smoothly. One night my patient got out of bed and wandered around out in the corridor, disoriented. So we put the light on in her room, the nurses chatted with her to keep her in touch with her surroundings, and we changed her sleep medication. Except for that episode, all went well. It was spring, and the hospital had a little garden next to the ward. After a month or so, she was well enough one day to sit there in the sunshine, well blanketed in a wheelchair. When I stopped by to say hello, she was content.

That same day, the house staff saw a film on mouth-to-mouth resuscitation technique, which was just then being rediscovered and perfected. Two days later, on morning rounds, as we approached my patient’s bed, she gave a gasp and began to turn purple. Her eyes rolled up and she stopped breathing. I clambered onto the bed, stuck my finger into her mouth, pulled out her false teeth, tilted her head back, pulled her chin forward, and started to breathe her. As I approached her mouth, I wondered if I would choke up. I have an active gag reflex, and it was all pretty sudden, frightening, and unaesthetic. I emptied my mind of sensibility and concentrated on the task, and it went all right. It felt a bit unreal.

We had a good team. By the time I had blown several breaths into her, checking to see if the air was going in by the expansion of her chest, the others had brought the emergency cardiac tray. We had no defibrillator

When my patient didn't die in the first dangerous 48 hours, I was grateful. She was pleasant and calm and had a capacity for ironic wit.

then, but the intern got ready to inject adrenaline directly into her heart with a syringe that had a long needle for that use. He looked questioningly at the chief resident, who shook his head once. I saw their exchange out of the corner of my eye, but I kept going for a few more minutes, until the chief resident said, “Ok.” Then I stopped too. She died that morning.

As we walked away, I wanted to say something to the others. It had happened so fast. She was supposed to be well on the way toward recovery. I had cared for her. I said, “God damn it, I thought she was . . .”

The chief resident, an imposing guy—big, tough, hardworking, completely competent—gave me a sharp look, made a cutting motion with his hand, and said, “Forget it!” So I shut up.

I called her daughter and asked her to come in. When she arrived at the nurses’ desk, I greeted her and started to walk her to an empty waiting room. I put my hand on her arm. She stopped and looked at me. “She’s dead,” she said.

“Yes.”

Her knees gave out and I held her up. She began to cry. When we got to the waiting room, I told her what had happened. We sat awhile. Then I asked permission to perform an autopsy. She said she wanted to bring the whole family in on that decision, and I said fine. She wanted to see her mother; I went back to check. The nurses had the body in a small ward, the curtains around. The daughter went in and stayed there awhile.

Then the younger sister arrived. I escorted her to the bedside. She immediately burst into tears. “How could you do this? How could you leave us?”

Finally, we had a family conference with the daughters, the grand-

daughter, and the husband. I explained that we wanted an autopsy because it was the only way we could learn if there was anything we could have done differently. The granddaughter said nothing, just looked at us all intently. The younger daughter deferred to her older sister. The husband, a little gray man, dabbed at his nose. He said he didn’t know, maybe she had suffered enough. The oldest daughter turned to him in fury. “It’s a little late for you to show such feeling,” she said. “If the doctors want an autopsy because they think it will be useful, we’re going to let them do it!”

“All right, all right,” he said.

Later I got a call from the pathology department that the examination had begun. I went down to the autopsy room. The pathology resident saw my feelings and was businesslike and easy. I felt grateful that the scalp flap had been turned down over her eyes. While she was alive, one of the lab tests had made me wonder whether there was an inflammation of the pancreas, but it wasn’t consistent with anything else, so we didn’t treat her for that. I asked him about it. I was relieved that there was no evidence for pancreatitis that he could see. Then he told me her heart showed a lot of scarring. She must have had several heart attacks before this one. The death itself must have been due to a burst of irregular electrical activity because there was nothing new to be seen. I thanked him and left.

A few days later the older daughter called and asked me what the autopsy had shown. I told her about the previous heart attacks. Although her mother hadn’t said anything to suggest that they had happened, and no one in the family had been aware, the daughter didn’t sound surprised when she heard. That made me feel odd. Death of a broken heart? But I said nothing and she just thanked me and hung up.

That day one of the chief resident’s patients died. She was in her 40s, and had been hospitalized many times for a rare disease. I hadn’t known her well, just noticed her as a quiet black woman with pleasant face. We hadn’t expected her to die just then, but she had been sick a long time. When we walked out of the room after she died, the chief resident said, “Damn it! I’ve seen her through so many of these bouts. God damn it to hell! I really cared for her. I didn’t think she’d die now!”

“You son of a bitch,” I said to myself. “You son of a bitch.” □



From Tattoos to Limbic Tunes

*On trusting one's intuition in
the search for clues to illness*

by Thomas P. Hackett

Like most enthusiastic readers of Sherlock Holmes, I have spent a lifetime trying to deduce all kinds of facts about a person from close inspection of hands, face, clothing, demeanor, mud stains on trousers, and tobacco ashes on sleeves. I remember sitting on trolleys as a boy in Cincinnati, trying to determine the occupation of fellow travelers by such an inspection. Holmes had pointed out such telltale signs as a typesetter's callus on the left thumb, the notched teeth of weavers, the stained palms of wool dyers, and the scuffed outer soles of chimney sweeps' shoes. Unfortunately, there were very few weavers, typesetters, wool dyers, and chimney sweeps on the Elberon Avenue streetcar, but I never tired of looking for those

revealing signs that would give instant insight into the nature of another.

When I interned at Marine Hospital in San Francisco I came upon a genuine device of Sherlock Holmes: the tattoo. In the 1950s San Francisco was a veritable National Gallery of marine tattoos, many of which were classics. Most had been applied by a relatively small number of master tattooists, each of whom had an individual style. I learned to recognize those that had been needled in Hong Kong, Singapore, Nagasaki, Mauritius, Port Said, and the other major ports in the Orient, around the Mediterranean, or around the Indian Ocean. With a little practice I was able to judge the age of tattoos as well. While auscultating a chest, I was able to tell the seaman where he

*When I question students, I often find
a marked discrepancy between the
resident's or trainee's presentation
and the patient in the flesh.*

had sailed and when. That blew the sailor's mind; it blew me away too, to draw those Holmesian inferences and find that some of them, at least, were correct.

After my internship the Armed Forces assigned me to the Public Health Corps prison service at the Federal Reformatory in Chillicothe, Ohio. There I came upon a whole new iconography of skin art: jailhouse tattoos. Most jailhouse tattoos—done by amateurs—are monochromatic and crude. They often consist of messages such as “hard luck” scrawled on the knuckles of delinquents and street brawlers, or “sweet” above one nipple and “sour” above the other.

About a dozen tattoos signify membership in a secret society or cult. For example, the Pachuco Cross on the web space between thumb and forefinger with radiations coming from the crossbars originally indicated membership in a society of thugs from the Tijuana-Ensenada area who spread across the country. That tattoo later came to mean membership in, or identification with, a violent crowd. The Panzers wear a little lightning mark, like one half of the Nazi SS sign, on the underside of the left wrist. The Anabaptists—who roam the West in vans, supporting themselves by drug sales, prostitution, and thievery—have a blue tear at the corner of the left eye.

When I arrived at MGH for psychiatric training, I saw a dwindling number of tattoos, but continued my Holmesian search for clues. Excluding the signs by which we are taught to recognize physical illness—tics, paralyses, atrophies, rashes—few outward manifestations serve as landmarks for psychiatric illness. There are wrist scars on wrist slashers, tooth marks on the knuckles of barroom brawlers, and periorbital scars received by sociopathic characters in

fight. There is the non-painful parotic swelling in bulimics. John Kuehnle, assistant clinical professor of psychiatry, says any woman with three or more rings on one hand or any man with two or more rings is a manic or hypomanic. The Omega sign on the forehead (said to be caused by hypertrophy of the corrugator muscle due to excessive frowning) supposedly signifies depression. The only Omega signs I remember seeing were on Rudy Vallee, Guy Lombardo, and Zero Mostel. Finding only slim pickings, I shifted from tattoos and specific signs to more general impressions.

When, as a clinical teacher, I question students, I realize how little value our training system places on exterior signs. The typical resident or trainee presenting a case will describe a well-developed, well-nourished female who presents with shortness of breath. Then the present illness, past illness, family history, and review of symptoms unfold—along with mental status, detailed physical, and account of laboratory findings. I won't find out what the woman looks like unless I ask. I will know whether she has exophthalmus, scleral icterus, or ptosis, but it is unlikely that I will learn the color of her eyes or how they look at others. I always ask the resident how I could recognize the patient in a crowd. In the old days, when the Bulfinch wards each had 15 beds, I would tell the resident to describe the patient in such a way that I could go right up to her bed.

I also ask about the patient's voice, demeanor, and handshake. What kind of face and body does this person carry through life, and how is the body held? Often students are so taken by the search for the pathological that they focus all their attention and observational powers on it. I strive to make them as aware as possible of the patient as a person.

I often find a marked discrepancy

between the resident's or trainee's presentation and the patient in the flesh. Frequently I am startled by how attractive or unattractive a patient is, or by his or her arrogance, coldness, and hostility. The person is a Uriah Heep or a George S. Patton type for which I am unprepared. I don't know whether the presenter failed to notice these attributes (in which case I wonder how much else he or she might have missed), or whether he or she didn't think this type of naturalistic observation was important. At any rate, I always call attention to the discrepancy and try to find out why it occurred.

Why is appearance so important? What's its clinical yield? As we describe other people we generally become more aware of the feelings they evoke in us. Do we like them or not? What kind of waves are we picking up? This information can be vital. What the patient brings out in us can shape the doctor-patient relationship for better or worse. I would not like to be the patient of a doctor who didn't like me; too many mistakes are apt to be made, ranging from misdiagnoses to mistakes in prescribing medication to overtreating in order to make up for covert hostility. Yet I often have trouble getting an honest answer to the question “Do you like him or her?” We are taught that doctors are supposed to like all patients.

I am interested in first impressions—those we register before we take a history or get to know the patient. First feelings consist of what we bring to the relationship and what the patient brings. Our personal contribution to the doctor/patient dyad is based on our past experience with individuals who in some way have reference to the patient. The name may be similar (I have never liked the names Maude, Flora, Herman, or Zeke). Facial features, voice, manner, or body habitus may, on some conscious or unconscious level, re-

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mind us of someone from the past.

The patient's contribution is what he or she precipitates in us. As assistant professor of psychiatry George Murray would ask, "What limbic tune is the patient playing? Is he or she making you feel uneasy, intimidated, puzzled, embarrassed, sleepy?" Depressed individuals often make us sad or melancholy no matter what the content of their talk. Grieving patients, those who have recently lost someone, are apt to convey anger to us, often unintentionally. Our feelings can be a diagnostic key.

Last spring eight medical students and I examined a patient with a masked depression who vigorously denied being depressed. His complaint was low back pain, yet he had early morning awakening, weight loss, a sense of hopelessness, and loss of pleasure. He said the quality of his life had changed. He spoke of the death of friends, his pain, and his inactivity, in a lackluster manner that was at times poignant. When the interview ended I asked the students whether they were saddened by what they had heard. Four responded positively. They diagnosed depression despite the patient's denial. The other four got the point. They learned to listen to what the patient was saying, not so much to sort out symptoms as to get the tone and theme of his monologue on loss, change for the worse, and a bleak future. In other words, they were allowing their emotional system—their limbic system, if you will—to pick up the affective tone.

George Murray uses the term "limbic music" to describe this phenomenon. If you believe the limbic system is a mediator of emotion—and most of us do—then you must believe it has something to say even though it has no specific voice. It can influence posture, voice, demeanor, and mood; it is probably the primal source of intuition. The limbic system mediates the four Fs—fight, fear, feed,

and fornication—and also plays a role in bonding (loyalty, territoriality, and gender role).

We doctors are so cortical or neocortical, so intellectual, so cerebral in our approach that we tend to forget the huge mass of limbic tissue devoted to feelings. In order to hear limbic music you have to be able to decorticate yourself—to cut off the cognitive and let your limbic system do the listening.

Murray has identified two mechanisms whereby the cortex can interfere with limbic or intuitive function. He calls the first "limbic bypass": there is no emotional realization, only intellectual understanding. The other is "neocortical squelch"—that is, intellectual awareness quashes limbic tunes. You feel someone is hostile, but you immediately dampen that perception by calling yourself paranoid—saying there is no earthly reason for the person to be hostile.

Ed Messner, associate clinical professor of psychiatry, uses the term "autognosis" or emotional proprioception. This concept is very similar, if not identical, to Murray's limbic tunes. Messner is more cerebral in his approach. He says autognosis is, among other things, designed to point out that one may be getting overly involved with one's patients. He gives a seminar on this topic for our residents in psychiatry; others give similar seminars to residents in medicine. Insofar as I know, these sessions have met with success.

Can autognosis or limbic music be adequately taught? Can you teach someone to use intuition, to use the self as a diagnostic instrument? I think it is possible. Some can learn it better than others. Each patient and each physician wears emotional tattoos; we need to learn to recognize them in ourselves and others.

Can't intuition, the sense of right-

ness about something, be misleading, damaging to relationships? Can't it heighten prejudice and intensify our background animosities—against minorities, for example? I think there is no question that it can. To guard against these misapplications, one must know one's vulnerability—where the error is most likely to be made. Use of intuition always must be taught with strong concern for the abuses to which it can be put—that is, for the wrong hunches.

I have had many suspicions, doubts, and a variety of alarms about people. I listen to all of them. I am apt to be wrong about paranoids, and judge them too harshly. Invariably, though, I trust my limbic response more than any other when I am with potentially dangerous patients. I have examined a number of individuals brought before the court for assault, ranging from simple fistfights to murder. I often interview them alone. Over the years I have come to trust the cautionary alarm that begins like piloerection (hair raising) in the back of my neck. I get it sometimes before there is any sense of apprehension or fear; usually it means the person may assault me.

On the other hand, the neocortical approach—in this case the Rorschach Test—could not differentiate Nazi war criminals Hermann Goering, Wilhelm Keitel, Rudolph Hess, Joachim von Ribbentrop, Karl Doenitz, Erich Raeder, Alfred Jodl, Franz von Papen, Artur Seyss-Inquart, and others from a control group of American clergy, servicemen, and accountants. □

Thomas P. Hackett is Eben S. Draper Professor of Psychiatry and chief of psychiatry at Massachusetts General Hospital. This piece is adapted from a talk he gave at a conference on teaching at Pine Manor College in September 1984.

SNAPSHOTS OF COLONIAL MEDICINE

OR

*Take 2 Loads
Hm Boyle Hm*

The *Bulletin* joins the celebration of Harvard's 350th anniversary with a look at medicine in the 17th century

When Harvard was founded in 1636, there was almost no medicine as we know it. The Puritan Massachusetts Bay and Pilgrim Plymouth colonies contained few physicians. Ministers and elected officials were responsible for the health of their people, employing remedies from Europe and Indian lore.

As there was no Harvard Medical School in 1636, the *Bulletin* joins the celebration of Harvard's 350th anniversary with a look at medicine as it was practiced in New England in the 17th century.

The following pages contain excerpts from various sources—snapshots of colonial medicine, presented scrapbook fashion. We begin with Oliver Wendell Holmes' description of the Pilgrims' first winter, move on to an excerpt from a Colonial Society of Massachusetts report on attitudes toward illness, a manuscript of medical advice given to Massachusetts Bay governor John Winthrop, and Holmes again on the medical practice of John Winthrop the younger, governor of Connecticut. Last comes a piece of learned speculation on the teaching of medicine at Harvard in the 17th century, over 100 years before the establishment of HMS.

All spelling and punctuation is reproduced here as it appears in the originals, with the exception of numbers.

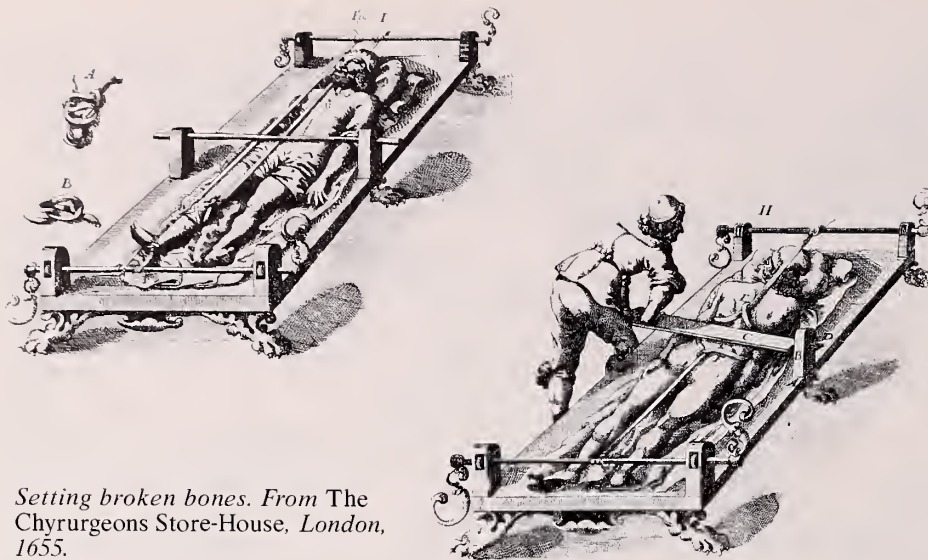
THE PILGRIMS' FIRST WINTER IN PLYMOUTH

From "The Medical Profession in Massachusetts," by Oliver Wendell Holmes

The forlorn voyagers of the Mayflower had sickness enough to contend with. At their first landing at Cape Cod, gaunt and hungry and longing for fresh food, they found upon the sandy shore "great mussels, and very fat and full of sea-pearl." Sailors and passengers indulged in the treacherous delicacy, which seems to have been the sea-clam; and found that these mollusks, like the shell the poet tells of, remembered their august abode, and treated the way-worn adventurers to a gastric reminiscence of the heaving billows. In the mean time it blew and snowed and froze. The water turned to ice on their clothes, and made them many times

Facing page: "A Register of the Diseases, with a line drawn from every one of them, to that part of the body where they make seisure," from A Short-Method of Physick, Shewing The Cure of Fourty-five severall Diseases, which are the generall, and most incident to Men and Womens Bodies, London, 1659.





Setting broken bones. From *The Chyrurgeons Store-House, London, 1655*.

like coats of iron. Edward Tilley had like to have "sounded" with cold. The gunner, too, was sick unto death, but "hope of trucking" kept him on his feet,—a Yankee, it should seem, when he first touched the shore of New England. Most, if not all, got colds and coughs, which afterwards turned to scurvy, whereof many died.

How can we wonder that the crowded and tempest-tossed voyagers, many of them already suffering, should have fallen before the trials of the first winter in Plymouth? Their imperfect shelter, their insufficient supply of bread, their salted food, now in unwholesome condition, account too well for the diseases and the mortality that marked this first dreadful season; weakness, swelling of the limbs, and other signs of scurvy, betrayed the want of proper nourishment and protection from the elements. In December six of their number died, in January eight, in Feb-

ruary, 17, in March 12. With the advance of spring the mortality diminished, the sick and lame began to recover, and the colonists, saddened but not disheartened, applied themselves to the labors of the opening year. . . .

The Pilgrims of the Mayflower had with them a good physician, a man of standing, a deacon of their church, one whom they loved and trusted, Dr. Samuel Fuller. But no medical skill could keep cold and hunger and bad food, and probably enough, desperate homesickness in some of the feeblers sort, from doing their work. No detailed record remains of what they suffered or what was attempted for their relief during the first sad winter. The graves of those who died were levelled and sowed with grain that the losses of the little band might not be suspected by the savage tenants of the wilderness, and their story remains untold.

like much in the 18th century, dwelt continually on submission to God's will, inculcating resignation in the face of illness and death. . . .

But resignation and submission to God's will did not imply dumb passivity. Prayer was the first of the healing arts, practiced among all ranks and in all regions of the colony, but it was not the only one. God had given mankind intelligence, and people were duty-bound to use it. Consequently when 17th- and 18th-century people suffered injuries or took sick, they called the minister and, if they could afford it, the doctor. Prayers and potions (including mercury and opium), blessings and bloodlettings complemented each other as bedside rituals. Though the nature and extent of religious commitment varied among individuals, virtually everyone agreed that ministering to the spirit as well as to the body was central to treatment of disease. When it came to the healing arts, clergymen and laymen saw no conflict between the science of medicine and religion.

Collectively, the techniques of healing that clergy and laymen employed combined old English folk remedies and Indian therapies with up-to-date scientific techniques. These three elements in treatment coexisted during the 17th and 18th centuries, despite their diverse origins and assumptions. Massachusetts settlers, living in a quasi-frontier environment, showed some willingness to experiment with new remedies from the outset. By the beginning of the 18th century, if not sooner, practitioners had added some distinctly American products like sassafras to their assortment of routine prescriptions. Among a handful of learned clergy and physicians this empiricism was self-conscious and scientific, as in the Boston inoculation experiment of 1721; more generally, however, a popular "folk empiricism," much scorned by the learned, was being practiced. . . .

Although historians have directed most of their attention to the handful of prominent, trained physicians, in reality the healing arts were practiced chiefly by self-taught or slightly trained "empirical" doctors, midwives, clergymen, and self-dosing laymen who, in treating themselves, their families, and their neighbors, practiced the most common of the healing arts. Popular medicine dominated colonial and revolutionary Massachusetts.

COLONIAL ATTITUDES TOWARD ILLNESS

From *"The Healing Arts in Colonial and Revolutionary Massachusetts: The Context for Scientific Medicine"* by Richard D. Brown, in *Medicine in Colonial Massachusetts, 1620-1820*

Physical illness was understood largely within a framework of religious belief. For Calvinists especial-

ly, the first cause was divine, if unknowable. Yet since God worked through nature, at bottom most people in Massachusetts, for at least the first century of settlement, regarded illness as God's judgment. Death itself was an immediate, inevitable presence, so its handmaiden, illness, could never be unexpected. Seventeenth-century devotional literature,

THE MEDICAL PRACTICES OF JOHN WINTHROP SR. AND JR., GOVERNORS OF MASSACHUSETTS AND CONNECTICUT

From medical directions written for Governor Winthrop of Massachusetts by Dr. Stafford of London, 1643

For my worthy friend Mr Wintrop.

For Madnesse: Take ye herbe Hypericon (:in English St John's Wort) and boile it in Water or drinke, untill it be strong of it, and redd in colour: or else, putt a bundle of it in new drinke to Worke, and give it ye patient to drinke, permitting him to drinke nothing else. First purge him well with 2 or 3 seeds (: or more, according to ye strength of the partie:) of Spurge. Let them not eat much, but keepe dyet, and you shall see Wondrous effects in fewe dayes. I haue knowne it to cure perfectly to admiration in five dayes.

For ye Falling Sicknesse Purge first with ye Extract of Hellebore (:black hellebore I meane:) and in stead of St John's Wort, use pentaphyllon, (or meadow Cinquefoile:) use it as aboue is said of St Johns Wort, & God Willing he shall be perfectly cured in short or longer tyme, according as the disease hath taken roote. . . .

For paines in ye Brest or Limmes: Weare a Wilde Catts skin on ye place grieved.

For the King's evill: Take 2 Toades & let them fast 2 or 3 dayes that they

may spewe out their Earth, then boyle them in a pint of Oyle in a newe pipkin covered so long, till they be brought to a black Coale broken in peeces. presse out the Oyle, from the said Toades, reserve a 4th part, to the other three parts add halfe a pound of yellow wax, shavd small. let the wax melt in the Oyle in wch dippe linnen cloathes, that they may be well covered cerecloathes. with the 4th part of the Oyle left, annoynt all the places infected, & then strewe of my black powder of Toades (mentioned before for an Antidot agaynst the Plague) upon the sores or swellings, & then put on of ye cerecloath.

dresse the running sores once everie 24 howres, but it will serve to dresse the swellings once in 4 dayes. Everie 4th day at furthest give of ye said black powder to the partie & let them swet upon it. you may proportion the dos from 5 graynes to a dragme according to the strength & constitution of ye partie. if the partie be strong, it is the better that they swet everie day or everie second day.

By this Course ther is no doubt of the cure by Gods assistance.

Cautions in Phisick.

1 That you doe not let Blood, but in a pleurisie or Contusion, and that necessitated.

2 yt in ye beginning of all Feavers,

you fast 2 or 3 dayes from meate and drinke, except ye last day, and that so litle, as onely to sustaine Nature; and afterward you come to your dyet by degrees.

3 yt you purge to follow Nature, and not to contrarie her: as if the partie Vomit, you purge by vomit; if the partie be loose, you purge downwards: if the partie bleed at ye nose, you draw blood.

4 yt in all purges you administer in long diseases, or to weake persons, you mixe Cordials, as Confectio Alchermes, etc. And yt you purge with simples and not compounds, except the disease be mixt. . . .

Nota bene. No man can with a good Conscience take a fee or a reward before ye partie receive benefiu apparent: and then he is not to demand any thing, but what God shall putt into the heart of the partie to give him. And he is not to refuse any thing, that shall be so given him, for it commes from God.

A man is not to neglect that partie, to whom he hath once administred, but to visit him at least once a day, and to medle with no more, then he can well attend. In so doeing he shall discharge a good Conscience before God & Man.

These receipts are all experimented.

From Oliver Wendell Holmes' commentary on the medical directions for Governor Winthrop, 1862

I t seems not unlikely that this collection of recipes was sent to Governor Winthrop in consequence of a direct application to his friend Dr. Stafford for a list of remedies useful in common diseases. A paper so carefully drawn up would hardly be volunteered by a London physician to a person who had been long in a distant land, and of whose wants he would know little, unless he had been asked for it.

It was said of Governor Winthrop, in his last illness, by "the venerable Cotton" (not Mather), that, among his other merits, he has been "Help for our Bodies by Physick." It may be conjectured that the Governor wrote to Dr. Stafford, that he was in the habit of prescribing among his neighbors: otherwise the London physician would hardly have laid down those professional rules which are found at the end of the paper, under the head "Nota bene." . . .

For paines in y^e Brest or Limmes:
Weare a Wilde Catts Skinn on y^e place grieved.

For a broken bone, or a joynt dislocated, to knit them:

Take y^e barke of Olme, or Witch = hazle; cutt away the Outward part, & cutt y^e Inward redd barke small, and boyle it in Water, till it be thick that it will rope: pound it very Well, and lay of it hott, barke and all upon y^e Bone or Joynt, and tye it on: or with y^e musilage of it, and bole Armeriack make a playster and lay it on.

From medical directions written for Governor Winthrop by Ed: Stafford of London, 1643.

[T]he dawn of a new day in English medical practice was just showing itself. In 1666, Sydenham published his first treatise. He was a man of observation and good sense, rather than of book-learning; and, of course, threw all the learned fools of his time into a spasm of hysteric horror and apprehension by his use of these two unpopular qualities. Dr. Stafford—who was young enough to have a very keen eyesight, as may be seen in the minute dots over his *i*'s, *j*'s, and *y*'s—may have lived long enough to learn from Sydenham how to treat small-pox by better means than toad-powder and sweating; but the worthy Governor was born too early, and died under the ancient dispensation. . . .

Dr. Stafford's practical directions to so considerable a person as Governor Winthrop, in a strange land where he would be exposed to unknown causes of disease, might be taken as a fair sample of the better sort of practice of the time. There is no parade of polypharmacy; no display of learned names for aches and ailments. It was written for the special use of a friend, and evidently with care and forethought. . . .

Whatever we may think of Dr. Stafford's practice, it is not certain that his patients would all have done better under the treatment of the present day. Some differences there would certainly be in our favor. We should trust more to moral treatment, in "madness," than to St. John's wort; to diet, rather than to cinquefoil, in epilepsy. We should hope a good deal from opiates in dysentery, and confidently expect to arrest some fevers—those of periodical type—by quinine. But slight cases of disease would commonly get well under his treatment, and severe ones often die under ours. . . .

The general medical directions at the end of the paper are very judicious, and might be followed with profit by the students of our own time. Some of them are of the true Hippocratic stamp, and confirm the idea that Dr. Stafford was a man of good sense and education. He has a just claim to be treated with respect; and, though some of his prescriptions may cause us to smile or shudder, it would be well if a physician of our time, whose prescriptions should be exhumed in the year 2080, were able to stand the examination of posterity as creditably as the very respectable Dr. Stafford, friend and adviser of

John Winthrop, the honorable Governor of the Massachusetts Colony.

From Oliver Wendell Holmes' "The Medical Profession in Massachusetts."

The Winthrops . . . were the medical as well as the political advisers of their fellow-citizens for three or four successive generations. One of them, Governor John of Connecticut, practised so extensively, that, but for his more distinguished title in the State, he would have been remembered as the Doctor. . . .

The Governor employed a number of the simples dear to ancient women,—elecampane and elder and wormwood and anise and the rest: but he also employed certain mineral remedies, which he almost always indicates by their ancient symbols, or by a name which should leave them a mystery to the vulgar. I am now prepared to reveal the mystic secrets of the Governor's beneficent art, which rendered so many good and great as well as so many poor and dependent people his debtors,—at least, in their simple belief,—for their health and their lives.

His great remedy, which he gave oftener than any other, was *nitre*; which he ordered in doses of 20 or 30 grains to adults, and of three grains to infants. Measles, colics, sciatica, headache, giddiness, and many other ailments, all found themselves treated, and I trust bettered, by *nitre*; a pret-

ty safe medicine in moderate doses, and one not likely to keep the good Governor awake at night, thinking whether it might not kill, if it did not cure. We may say as much for *spermaceti*, which he seems to have considered "the sovereign'st thing on earth" for inward bruises, and often prescribes after falls and similar injuries.

One of the next remedies, in point of frequency, which he was in the habit of giving, was (probably *diaphoretic*) *antimony*; a mild form of that very active metal, and which, mild as it was, left his patients very commonly with a pretty strong conviction that they had been taking *something* that did not exactly agree with them. Now and then he gave a little iron or sulphur or calomel, but very rarely; occasionally, a good, honest dose of *rhubarb* or *jalap*; a taste of stinging *horseradish*, oftener of warming *guaiacum*; sometimes an *anodyne*, in the shape of *mithridate*,—the famous old farrago, which owed its virtue to poppy juice; very often, a harmless powder of coral; less frequently, an inert prescription of pleasing *amber*; and . . . twice or oftener,—let us hope as a last resort,—an electuary of *mil-lipedes*,—sowbugs, if we must give them their homely English name. One or two other prescriptions, of the many unmentionable ones which disgraced the pharmacopoeia of the 17th century, are to be found, but only in very rare instances, in the faded characters of the manuscript.

MEDICAL STUDY AT HARVARD IN THE 17TH CENTURY

From "Curriculum: Medicine," Harvard in the 17th Century, by Samuel Eliot Morison

The case for the existence of medical study at early Harvard rests largely upon a letter from John Eliot to Thomas Shepard, printed in the well known Indian tract, "The clear Sunshine of the Gospel breaking forth upon the Indians in New-England." . . . One way, he writes, to counteract the 'antick, foolish and irrationall conceits' of the Indian "Powwaws," or medicine men, is for the Lord to "stirre up the hearts of some or other of his people in England to give some

maintenance toward some Schoole or Collegiate exercise this way"—i.e. in Medicine—, "wherein there should be Anatomies" (autopsies, dissections), rewards for the discovery of healing herbs, and means to "traîne up these poore Indians in that skill which would confound and root out their *Powwaws*."

Finally comes out the "real" reason for this pious project:

There is also another reason which moves my thought and desires this way, namely that our young Students in Physick may be trained up better then yet they bee, who have onely theoreti-

call knowledge, and are forced to fall to practise before ever they saw an Anatomy made, or duely trained up in making experiments, for we never had but one Anatomy in the Countrey, which Mr. *Giles Firman* (now in England) did make and read upon very well, but no more of that now.

It is certain that President Dunster made every endeavor to obtain medical instruction at the College. He appealed to the New England Confederation for money to buy medical books for the College Library. In answer to a petition of his which has not been preserved, the General Court of the Bay Colony on October 27, 1647 (a month after Eliot's letter) voted:

Lastly, we conceive it very necessary that such as studies phisick or chirurgery may have liberty to reade anotomy, and to anatomize once in foure yeares some malefatour, in case there be such as the Courte shall allow of.

And Edward Johnson, writing around 1651 of the College, mentions somewhat casually after the catalogue of 'hopeful plants' in the ministry 'nurst up' by the College: 'Beside these named, some help hath been had from hence in the study of Physick.'

Out of this we can glean but one certain fact: that Giles Firmin, before he returned to England about 1647, 'did make and read upon' an 'anatomy'; i.e., he lectured on a fresh dissection of a cadaver. But whether he lectured before the Harvard students, or in Boston, or elsewhere, does not appear. Nor is there any evidence as to whether Harvard ever realized her quadriennial corpse privilege. None of the recorded New England autopsies of the 17th century were performed at Cambridge; and the first medical lectures in Massachusetts were those delivered by Dr. William Lee Perkins at Boston in 1765. Harvard *may* have had a course of lectures from Giles Firmin, and some of the students *may* have seen a corpse or two dissected; but certainly there is no ground for supposing that the College afforded any systematic medical instruction or even facilities for reading up the subject. It is true that we have the text of a college oration *de Microcosmo* by the versatile Michael Wigglesworth, delivered in two parts in the year 1652; it is a description of human anatomy and physiology, in 23 closely written pages. But this probably represents the result of private study or

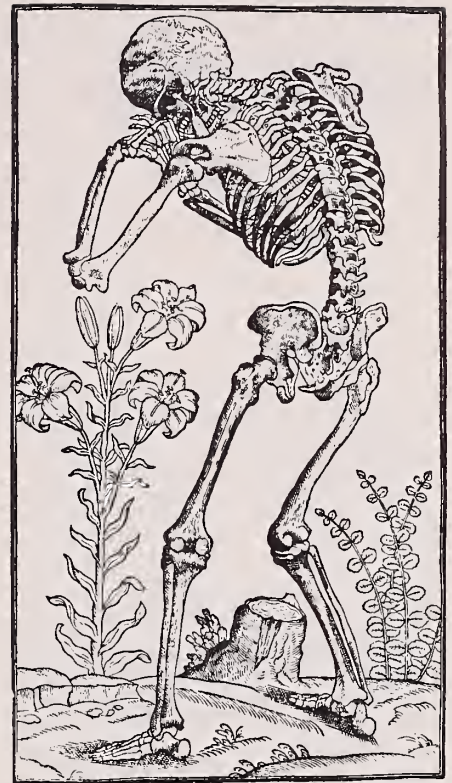
apprenticeship during the year following his graduation.

That the founders intended to provide at least a pre-medical course at Harvard, and would have done so had the money been forthcoming, is certain. Beside President Dunster's appeal to the Confederation in 1647, we have Jonathan Mitchell's petition to the General Court in the 1660's, urging the authorities to endorse a drive for the foundation of new fellowships, "some for physitians who may become able eminent and approved in that faculty, and be a priviledged society or Colledge in time," like the Royal College of Physicians in London.

Undoubtedly the Harvard students who studied Medicine did so according to the common English practice of the day, by apprenticing themselves to a physician. Such students were allowed to present a medical quaestio at their Master's Commencement. The first known to have availed himself of this privilege was Elisha Cooke, founder of a family of physicians and politicians, in 1660. He argued for the Harveian discovery of the circulation of the blood. Daniel Allin, later a Boston physician, denied in 1678 the old superstition that the liver let blood. Joseph Webb (A.B. 1684), although a divinity student, defended a new medical superstition, the notion of our early benefactor, Sir Kenelm Digby, that wounds might be cured by a sympathetic powder; this became a popular quaestio at Masters' Commencements. At the 1698 *Inceptio* two more medical heresies were defended and a third denied: the Digbeian theory of the magnetic treatment of wounds; belief in the existence of a universal cure-all; and the doctrine of specifics or signatures, according to which Divine Providence has provided an appropriate herb for every human ill. Nathaniel Clap (A.B. 1690) defended a curious quaestio: 'Whether the plastic force of the world can be applied to putting through a witchcraft job' (*opus veneficium*), and Peter Cutler (A.B. 1698) took the modern stand that certain chemicals may cure diseases not reached by the Galenic pharmacopoeia. Peter went to sea as a physician, but Nat became the patriarch of Newport.

As late as 1723 the College Library contained no medical books worth mentioning; but this does not mean that none were available elsewhere. Samuel Brackenbury (A.B. 1664), a practicing physician who died

The Skeleton of the Backe.



"The Sceleton of the Backe," from *The Historie of Man*, London, 1578.

in the small-pox epidemic of 1678, left the collected works of Etienne de la Rivière (1663), Burton's 'Anatomy of Melancholy,' and four books by Dr. Thomas Willis, physician in ordinary to Charles II. George Alcock, but three years out of college when he died in 1676, left about 100 works of which at least half were medical; they included Harvey *de Motu Cordis et Sanguinis*, the works of Daniel Sennert and of Ambroise Paré, Van Helmont's *Ortus Medicinae*, Sir Thomas Browne's *Religio Medici*, and books by German, Dutch, Italian, Scotch, and Polish medical writers of the 17th century. Inventories such as these prove that the medical authors most highly regarded in Europe were available for the few Harvard graduates who proceeded to the study and practice of medicine in the 17th century. □

The selections for this piece were compiled by assistant editor Lisa Derman, with the help of Richard J. Wolfe, curator of Rare Books and Manuscripts and Joseph Garland Librarian, Countway Library. Illustrations courtesy of Rare Books, Countway Library.



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